University of Rochester

Official bulletin

Graduate Education

2025

University of Rochester

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Graduate Education

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The University of Rochester is an independent university that offers over 50 doctoral programs, over 200 master's programs, and over 25 advanced certificate programs in the following schools:

School of Arts & Sciences
Edmund A. Hajim School of Engineering & Applied Sciences
Eastman School of Music
Eastman Institute for Oral Health
School of Medicine and Dentistry
School of Nursing
Simon Business School
Warner School of Education and Human Development

The bulletin was prepared in the Summer of 2025. Provisions of this publication are not to be regarded as an irrevocable contract between the student and the University. The University reserves the right to make changes in its course offerings, degree requirements, regulations and procedures, and fees and expenses as educational and financial considerations require.

EOE Minorities/Females/Protected Veterans/Disabled

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Publications about Graduate Programs at the University of Rochester

The Regulations and University Policies Concerning Graduate Studies is a separate document addressing central policies on enrollment, curriculum, and completion of graduate degrees. It is found at www.rochester.edu/gradstudies/publications.html.

Most colleges and schools of the University publish brochures or digital files listing faculty, courses, and degree requirements. In addition, many departments offering graduate programs publish detailed brochures about their courses of study, faculty members, facilities, scholarships, etc. All graduate programs have valuable information on their websites.

Requests for information about the programs and how to apply should be made to the following:

School of Arts & Sciences Departmental/Program brochures and online applications	Office of Graduate Studies University of Rochester 207 Lattimore Hall Box 270401 Rochester, New York 14627-0401 Email: graduate.admissions@rochester.edu www.rochester.edu/college/gradstudies
Eastman Institute for Oral Health	Admissions Office 625 Elmwood Avenue, Box 683 Rochester, NY 14620 Email: eiohadmissionsoffice@urmc.rochester.edu Phone: 585-275-8315 www.urmc.rochester.edu/dentistry/education
Eastman School of Music Graduate Studies at Eastman brochure and online application (Graduate and undergraduate)	Office of Admissions Eastman School of Music 26 Gibbs Street Rochester, New York 14604-2599 Email: admissions@esm.rochester.edu www.esm.rochester.edu/admissions
Edmund A. Hajim School of Engineering & Applied Sciences Departmental/program brochures and online applications	Office of Graduate Studies University of Rochester 207 Lattimore Hall Box 270401 Rochester, New York 14627-0401 Email: graduate.admissions@rochester.edu www.rochester.edu/college/gradstudies
School of Medicine and Dentistry Departmental/program brochures and online applications	Offices for Graduate Education and Postdoctoral Affairs School of Medicine and Dentistry University of Rochester Medical Center 601 Elmwood Avenue, Box 316 Rochester, New York 14642-0001 Email: gradadm@urmc.rochester.edu
MD and MD/PhD programs	University of Rochester School of Medicine and Dentistry Director of Admissions Elmwood Avenue, Box 601A Rochester, New York 14642-0001 Email: mdadmish@urmc.rochester.edu AMCAS: www.aamc.org

School of Nursing	Office of Student Affairs 601 Elmwood Avenue, Box SON Rochester, New York 14642-0001 (585) 275-2375 www.son.rochester.edu
Simon Business School	204 Schlegel Hall University of Rochester Box 270107 Rochester, New York 14627-0107 (585) 275-3439 Email: emba@simon.rochester.edu Email: admissions@simon.rochester.edu Email: phdoffice@simon.rochester.edu
Warner School of Education and Human Development	Raymond F. LeChase Hall University of Rochester Box 270425 Rochester, New York 14627-0425 (585) 275-3950 Email: admissions@warner.rochester.edu www.warner.rochester.edu

2025–26 Calendar*

This calendar is prepared far in advance of publication. Some dates may change. For specific degree program deadlines (i.e., application deadlines, qualifying exam dates, dissertation deadlines), check with department and/or school graduate studies offices. https://www.rochester.edu/provost/academic-resources/academic-calendar/

Fall Semester 2025	
August 25	Classes begin.
September 1	Labor Day (No Classes)
October 13	Fall term break. Classes resume October 15.
November 26	Thanksgiving recess begins. Classes resume December 1.
December 17	Winter recess begins after last examination.
Spring Semester 2026	
January 20	Classes begin.
January 23	Rochester "Monday," *first Friday of the Spring semester, students attend Monday classes*
March 7	Spring recess begins. Classes resume March 16.
May 15–17	Commencement weekend.

* These dates do not apply to the Eastman School of Music, Warner School of Education and Human Development, Simon Business School, or the School of Medicine and Dentistry (MD program). For additional information, please visit their respective websites:
ESM calendar
Warner calendar
Simon calendar
SMD Medicine calendar

University of Rochester

Graduate Education Senior Leadership

(as of June 2025)

Sarah C. Mangelsdorf, PhD
President and G. Robert Witmer, Jr. University Professor

Nicole S. Sampson, PhD
Provost and Chief Academic Officer

Melissa Sturge-Apple, PhD
Interim Dean and Professor, Warner School of Education and Human Development

Matthew Ardizonne, DMA
Associate Dean of Graduate Studies, Marie Rolf Dean of Graduate Studies, Eastman School of Music

James Brickley, PhD
Senior Associate Dean of Faculty and Research and Gleason Professor of Business Administration, Simon Business School

Cynthia Callard, EdD
Associate Dean of Graduate Studies and Professor (Clinical), Warner School of Education and Human Development

Eli Eliav, DMD, PhD, MBA
Director and Professor, Eastman Institute for Oral Health; Vice Dean for Oral Health, School of Medicine and Dentistry; Vice President for Oral Health, University of Rochester Medical Center

Wendi B. Heinzelman, PhD
Dean of the Hajim School of Engineering & Applied Sciences

Lisa Kitko, PhD, RN, FAHA, FAAN
Dean of the School of Nursing, Professor of Nursing, and Vice President of the University of Rochester Medical Center

David R. Lambert, MD
Senior Associate Dean for Medical School Education and Professor of Medicine, School of Medicine and Dentistry

Richard Libby, PhD
Interim Vice Provost, University Dean of Graduate Education, Senior Associate Dean of Graduate Education and Postdoctoral Affairs, and Professor of Ophthalmology, School of Medicine & Dentistry

David Linehan, MD
Dean of the School of Medicine and Dentistry

Christian Opp, PhD, MBA
Faculty Director of the PhD Program and Associate Professor of Finance, Simon Business School

Kate Sheeran, MM
Joan and Martin Messinger Dean of the Eastman School of Music

Lydia Rotondo, DNP, RN, CNS, FNAP
Associate Dean of Education and Student Affairs; Director, Doctor of Nursing Practice Program; Professor of Clinical Nursing, School of Nursing

Duje Tadin, PhD
Interim Robert L. and Mary L. Sproull Dean of the School of Arts & Sciences

Sevin Yeltekin, PhD
Dean of Simon Business School

Nick Vamivakas, PhD
Dean of Graduate Education and Postdoctoral Affairs, Hajim School of Engineering & Applied Sciences

Graduate Education

The University of Rochester was founded in 1850 and drew students from Rochester and around the world. The first PhD degree was awarded in 1925, and one of the first three recipients to earn the degree at the University later became the first of our 13 Nobel laureates. The University has been endowed by many visionaries who recognized and supported the value of education, especially at the graduate level, including George Eastman, founder of Eastman Kodak; Robert L. and Mary L. Sproull; Joseph C. Wilson (Class of 1931), founder of Xerox; and Charles F. Hutchison.

In 2024–25, the University had over 1,800 tenure-track faculty and roughly 9,791 full-time and 2,155 part-time students. Of the full-time students, 6,165 were undergraduates and 3,626 were graduate students.

The University of Rochester is accredited by the Middle States Commission on Higher Education (MSCHE), 1007 North Orange Street, 4th Floor, MB #166, Wilmington, DE 19801. In addition, various academic programs are accredited by specialized or professional agencies, signifying that they meet the standards of educational quality for those organizations. The University's academic programs are registered with the New York State Education Department (NYSED). The full listing can be found at www.rochester.edu/provost/accreditation/.

University Council on Graduate Education

The University Council on Graduate Education is chaired by the University dean of graduate education. The provost serves ex officio. Membership consists of the associate deans of graduate education of the School of Arts & Sciences, Hajim School of Engineering & Applied Sciences, Eastman School of Music, School of Medicine and Dentistry, School of Nursing, Simon Business School, and Warner School of Education and Human Development; and a faculty representative from each of the PhD degree-granting departments and programs across the University. The steering committee of the Council is composed of the deans and associate deans of graduate education.

The principal functions of the Council are to decide, on the basis of quality considerations, which departments shall be authorized to give work toward the PhD degree and to authorize or restrict, as necessary, the different PhD programs; to scrutinize the policies, standards, and facilities for work for the degree of doctor of philosophy throughout the University to ensure a minimum quality standard is met; and to make reports on the findings and recommendations to the provost and president. In performance of this function, the Council may engage scholars from other universities.

Upon nominations by the faculties or other authorized agencies in the several schools, the Council recommends to the provost for transmission to the Board of Trustees the candidates for the Doctor of Philosophy degree.

The steering committee of the Council, composed of the University dean of graduate education and the associate dean of graduate education (or equivalent) of each school, advises the Council in the performance of its functions, exchanges

information, and adjusts procedures in the schools to enable administrative uniformity as needed.

Graduate Student Life

Family-Friendly Policies for Graduate Students

All of the schools at the University of Rochester provide accommodation for graduate students for the birth or adoption of children. Students are encouraged to consult the specific administrative offices within their respective schools regarding school policies, tuition, fees, financial aid, and course credit details.

Graduate and Family Housing

Information on graduate and family housing is available at the University Apartments Office: by phone, (585) 275-3166; by email at uapts@reslife.rochester.edu or rebecca.orton@rochester.edu and online at www.rochester.edu/reslife.

To be eligible for University housing, the individual must currently be registered as a full-time graduate student or professional trainee of the University of Rochester. A lottery system establishes priority among qualified applicants.

The Office of Residential Life and Housing Services also operates the Off-Campus Living Program, which has listings of privately owned apartments, houses, and rooms. For more information on this program, call (585) 275-1081, send an email to offcampus@reslife.rochester.edu or check the website, www.rochester.edu/reslife.

Health Care Services

Student Health Program

The University Health Service (UHS) provides a full range of confidential, high-quality primary health care, mental health care, and health promotion services for all full-time University students on a prepaid basis through the Student Health Program. The University Health Service and the University Counseling Center are accredited by the Accreditation Association for Ambulatory Health Care (AAAHC). Information about services offered by the University Health Service and the University Counseling Center is available on the UHS website, www.rochester.edu/uhs.

Health Plan

All full-time students participate in the student health plan. The health plan has two parts: (1) The mandatory health fee covers unlimited primary care visits with the physicians, nurse practitioners, and registered nurses at the University Health Service; assessment, brief treatment, and referral services with mental health professionals at the University Counseling Center; health promotion programs and services; and public health surveillance. All full-time students must pay the mandatory health fee, which entitles them to use the University Health Service and the University Counseling Center throughout the academic year and the following summer (August 1 to July 31), as long as they are enrolled on a full-time basis. (2) Health insurance: for services such as surgical procedures, hospitalization, diagnostic laboratory tests and X-rays, visits to specialists, and prescription medications. These services are not covered by the mandatory health fee.

All full-time students must have health insurance in addition to the mandatory health fee. Students can enroll in the University-sponsored health insurance plan, or they can waive the insurance if they are covered by health insurance that meets University criteria.

Immunization Requirement

Entering full-time and part-time students must provide immunization information to meet New York State and University immunization requirements. These requirements, which are documented on the Health History Form (HHF), should be completed before arrival on campus. According to New York State law, students who fail to show proof of immunity to measles, mumps, and rubella will not be allowed to attend classes at the University. For detailed information about the immunization requirements, check Health Requirements for Entering Students on the UHS website https://www.rochester.edu/uhs/primary-care/mandatory-health-fee/entering-student-health-requirements/. Also, on the same page, see Health History Form FAQs to answer questions about completing the health history form. If your question is not answered in the FAQs, write to hhf@uhs.rochester.edu for assistance.

University Health Service (UHS)

UHS provides a full range of primary health care services, including the treatment of illnesses and injuries, women's health care, the management of ongoing medical problems, and advice and treatment for any health concern. In addition, UHS provides allergy injections, immunizations for travel and other vaccines (e.g., flu shots, HPV vaccine, Hepatitis B vaccine), physical therapy, laboratory testing, referrals to specialists, and health education. For more information about services for full-time students, check the UHS website at www.rochester.edu/uhs.

- **Confidentiality:** The relationship between health care providers and their patients is confidential. Notification of others, including parents, friends, and University faculty and administration, is generally considered the student's responsibility unless the condition is life threatening and the student is unable to assume responsibility for informing others. We will not share information about the fact or the nature of a student's visit to UHS without the student's permission.
- **UHS Website** (www.rochester.edu/uhs): The UHS website provides detailed information about the services provided by the University Health Service, the University Counseling Center, and the UHS Health Promotion Office.

University Counseling Center (UCC)

Any student initiating services at the University Counseling Center (UCC) can expect a comprehensive mental health assessment, an individualized treatment plan, and support for implementing such a plan. Same-day consultations are available for students who are in immediate crisis or at risk of harm to themselves or others.

Students use UCC services to address a variety of concerns, including anxiety, depression, apprehension about major life decisions or transitions, relationship difficulties, family problems, body image and eating, grief, sexual and gender identity, sexual functioning, substance use, and general discomfort about what is happening in their lives.

A student's individualized treatment plan may involve one or more of the following recommendations: group therapy at UCC, brief individual therapy at UCC, referral for longer-term therapy or specialized treatment with a mental health provider in the community, referral to TELUS Health Student Support, psychiatry services at UCC/UHS, substance use assessment, referral to other campus resources, and referral to case management at UCC.

Staff members are also available to discuss topics or concerns of special interest to groups of students, to consult with members of the University community about students of concern, and to develop and coordinate mental health-related educational programming.

The therapists at the University Counseling Center are licensed professionals and professionals-in-training from a variety of mental health disciplines. They employ many treatment approaches and draw upon a wide range of training and experience in the field of psychotherapy. Psychiatrists are available within UCC/UHS to provide prescription medication in conjunction with therapy.

- **Confidentiality:** UCC is extremely careful to protect the confidentiality of records. Students' University Counseling Center records are available only to those professionals directly involved with their care. Information about student visits will not be disclosed without a student's permission to any University official or faculty member, or to family, friends or roommates except in very specific circumstances. Those circumstances are limited to instances when a student's life or that of another person is in danger, when child or elder abuse is suspected, and the very rare occasions when UCC is presented with a subpoena. UCC records are separate from Strong Memorial Hospital medical records.
- **Urgent Situations and After-Hours Care:** The University Counseling Center offers on-call emergency service 24 hours a day throughout the year for students who are in urgent distress or who are concerned about someone else. The professional on call can be reached by calling (585) 275-3113.
- **The UCC website,** www.rochester.edu/ucc, provides information about the center's locations, hours, services, staff, online assessments and resources, and more.

Student Support

Disabilities

A student seeking reasonable accommodations on the basis of a disability should contact the Office of Disability Resources. Contact information is located on their website: https://www.rochester.edu/college/disability

Contact ODR by
Email: disability@rochester.edu
Phone: (585) 276-5075

Conflict Resolution: University Ombuds

The goal of the ombuds team is to promote a respectful, inclusive University for all members of the community by resolving disputes, challenging perceptions, and advocating for fairness at the University. For over 40 years, University ombuds, appointed by the provost, have been untangling complex problems and unresolved interpersonal and departmental issues with staff, faculty, and students who call on them for help.

Students who have concerns that cannot be resolved through other channels are encouraged to contact an ombuds for confidential assistance at (585) 275-9125 or www.rochester.edu/ombuds/our-services/. The ombuds team can help with concerns regarding discrimination and harassment, disability issues, and unresolved disagreements among faculty, staff, and students. All consultations are confidential.

International Services office

The International Services Office (ISO) provides a full range of programs and services throughout the University for over 3,500 international students and 480 scholars and employees and their dependents from more than 115 countries. The staff administers the F-1, J-1, H-1B, O-1, and TN visa programs for the University under specific government regulations. The staff of the ISO issues visa eligibility documents, provides advice on immigration regulations affecting international populations, and processes immigration benefits such as employment authorizations and extensions of stay.

The ISO acts as the University's official liaison with the U.S. Department of Homeland Security, the Student and Exchange Visitor Program (SEVP), and the Department of State, as well as foreign and American consulates and embassies. Locally, the ISO provides support and collaboration with government agencies including the Social Security Administration, Internal Revenue Service, and Department of Motor Vehicles. The office works closely with members of the University community to advocate for and address the needs of international students and scholars.

The ISO also serves as an information resource to help international populations adjust to the United States, the University, and the Rochester community. Services and programs include a comprehensive website and online resources (https://www.rochester.edu/iso/; electronic newsletters; TIPS On-Demand video tutorials (available through Blackboard); orientation programs for new arrivals and logistical support with government forms, taxes, and reporting requirements; and instructional workshops throughout the year. Additionally, advising appointments are

provided to help individuals effectively cope with personal challenges, legal concerns, and cultural adjustment. To promote intercultural understanding on our campuses, the ISO also contributes to cultural, social, and educational programming efforts within the University and the Rochester community.

The ISO's Contact Us page provides the most up-to-date ways to get in touch with the ISO office.

Health and Safety

It is the policy of the University of Rochester to provide an environment free from recognized hazards that could cause injury or illness to faculty, staff, students, patients, and visitors, and to protect its facilities from risk of damage from unsafe acts or conditions. The Environmental Health and Safety Department's mission is to support this policy through programs that advocate safety through high-quality service by professional, knowledgeable staff.

The department provides services to the entire University covering all campuses for any issues involving fire safety (through the Fire Marshal's Office), food safety (Sanitarian's Office), pest control (Pest Control Unit), laboratory safety (Laboratory Safety Unit), chemical waste disposal and environmental compliance (Environmental Compliance Unit), radiation safety issues (Radiation Safety Unit), emergency preparedness and business continuity (Business Continuity Unit), and occupational safety and health issues, such as ergonomics, indoor air quality, asbestos, and personal protective equipment (Occupational Safety Unit).

If you have questions or concerns, please contact the Environmental Health and Safety main office at (585) 275-3241 or send an email to questions@safety.rochester.edu. More information is available on our website, www.safety.rochester.edu.

Department of Public Safety

Serving Our Community

The Department of Public Safety is comprised of approximately 175 full-time staff that provides uniformed patrol, investigative, crime prevention, victim assistance, and workplace violence services, ID services, access control and specialized programs tailored to specific campus needs. They respond to calls of any nature, including all campus emergencies—fires, accidents, physical crimes and disturbances. Public Safety is a mixed force of sworn peace officers and public safety officers. Peace officers are able to make arrests due to the commission of a felony, misdemeanor, or other breach of peace based on probable cause, and are authorized to intervene promptly in mental health emergencies.

How to Contact Us

The University maintains an extensive network of interior and exterior public access telephones. You can call the Public Safety Communications Center for assistance any time of the day or night from any of these phones. Included are over 278 direct-dial blue light emergency phones (BLEP), 202 elevator phones, 65 service phones and over 100 other interior and exterior telephones. In an emergency, dial x13 from any University phone, including service phones located at building entrances, or dial #413 from AT&T or Verizon cell phones. Simply pick up a blue light emergency phone located on or near walkways and parking lots, and you will be connected to one of our emergency dispatchers automatically. An officer will be sent to your location right away. Local police, fire, or ambulance agencies will be notified as needed. (If you call 911 from within the University phone system, your exact location will not be displayed to the 911 system operator.)

- You may also call or text 585-275-3333 or use a blue light emergency phone.
- The dispatcher will determine first that you are safe. Once that is known, you will be asked for your name and location, as well as descriptive information about the incident or event with which you are involved. This information will assist the responding officer(s) or other emergency responders.
- You may contact an on-duty supervisor, 24 hours a day, by calling 585-275-3333.

Additional Information

Please go to our website: https://www.rochester.edu/public-safety/.

Title IX Sex Discrimination, Sex-based Harassment, and Sex- and Gender-based Misconduct

The University of Rochester does not discriminate on the basis of sex and prohibits Sex Discrimination in any Education Program or Activity that it operates, including in admission and employment. The Policy on Title IX Sex Discrimination, Sex-based Harassment, and Sex- and Gender-based Misconduct (Title IX Policy) defines Prohibited Conduct and explains how the University will respond to reports or complaints alleging such Prohibited Conduct, including applicable Grievance Processes used to resolve Complaints. The Policy is accessible here: https://www.rochester.edu/policies/policy/title-ix/.

Sex Discrimination includes discrimination on the basis of sex, sex stereotypes, sex characteristics, sexual orientation, gender identity, and pregnancy or related conditions.

Sex-based Harassment is a specific subset of Sex Discrimination consisting of quid pro quo sexual harassment, hostile environment sexual harassment, sexual assault, domestic violence, dating violence, and stalking. The Policy also prohibits retaliation.

Information about reporting, options, resources, and procedures related to the Title IX Policy can be found here: https://www.rochester.edu/sexualmisconduct/policies/

All University community members are protected from Prohibited Conduct and prohibited from engaging in Prohibited Conduct as defined in the Title IX Policy.

Who Is the University's Title IX Coordinator?

Julia Green (she/her/hers)

Associate Vice President for Civil Rights Compliance and Title IX Coordinator

Office: (585) 275-1550

Title IX line: (585) 275-1654

Email: julia.green@rochester.edu

Office Location: Wallis Hall 147A, within the Office of Equity and Inclusion suite on the first floor

Box: 270016 | Rochester, NY 14627

Each school has a designated Deputy Title IX Coordinator who can answer questions and assist you with reporting options and resources. You are welcome to contact any of these individuals, even if they are in a different school or unit from you.

What Does a Title IX Coordinator Do?

The Title IX Coordinator oversees the University's compliance with Title IX, as well as campus policies and procedures related to reports or complaints of Sex Discrimination, Sex-based Harassment, and Sex- and Gender-based Misconduct.

The Title IX Coordinator and Deputy Title IX Coordinators ensure that the process for addressing reports or complaints of Sex Discrimination, Sex-based Harassment, and Sex- and Gender-based Misconduct are handled promptly and equitably, with fairness to everyone involved. They make certain that anyone who comes to them understands their rights and the ways the University can support them and is well-informed about potential next steps and how the Title IX Office coordinates those supports and next steps. The Title IX Coordinator and Deputies do not investigate or adjudicate claims.

The Title IX Coordinator works with colleagues University-wide to educate the community about:

- Prohibited Conduct
- Grievance processes
- Reporting options
- Resources
- Support services

The Coordinator and Deputies, along with prevention education staff, also develop and implement prevention and awareness initiatives, including trainings for students, faculty, and staff.

Title IX Policy Employee Reporting and Notification Obligations

While all members of the University community are encouraged to report Sex Discrimination, Sex-based Harassment, and any other Sexual Misconduct to the Title IX Office, all employees who do not serve in a confidential role have specific obligations when an individual discloses to the employee that they have experienced conduct prohibited by the Policy. Specifically, all non-confidential employees must notify the Title IX Office or Title IX Coordinator directly when they receive information about conduct that reasonably may constitute Prohibited Conduct as defined in the Title IX Policy, including retaliation.

The following student-employees who receive disclosures while acting in their student-employment capacity also must make a report directly to the Title IX Office:

- Residential Life Staff
- All student employees with responsibility for teaching or advising

Employees can make a report using this online form.

A list of confidential employees is available in the Title IX Policy.

In addition, when a student, or a person who has a legal right to act on behalf of the student, informs any University employee of a student's pregnancy or related conditions, the employee must:

- provide the student with the Title IX Office's contact information and
- advise that the Office can take specific actions to prevent discrimination and ensure the student's equal access to the University's Education Program and Activity.

The definition of pregnancy or related conditions is in the Title IX Policy's Glossary.

Policy Against Discrimination, Harassment, and Discriminatory Employment/Service Practices (PADH)

The University's PADH prohibits discrimation and harassment on a number of protected classes, a listing of which can be found in Section I.A of the PADH. The PADH also prohibits retaliation. While all community members can make reports, only employees (including student-employees acting in their employment capacity) can be subject to action pursuant ot the PADH in response to a report of a potential policy violation.

You can access the PADH here: https://www.rochester.edu/policies/policy/discrimination-harassment/#IV_Complaint_and_Investigation_Procedures2

As the Associate Vice President for Civil Rights Compliance, Julia Green also oversees the PADH investigation process.

PADH Employee Reporting and Notification Obligations

All members of the University community are encouraged to report discrimination or harassment on the basis of a protected class, as well as reporting retaliation. This includes members of the University community who feel that they have experienced behavior that violates the PADH or who witness (as a bystander) or become aware of conduct that they believe violates this Policy.

However, there is a requirement that management personnel, supervisory personnel, and Human Resources Business Partners report when they observe, receive reports of, or learn about discrimination, harassment, or retaliation covered by the PADH. The obligation to report includes promptly (generally within 48 hours) reporting to the Office of University Engagement and Enrichment with all available details.

The PADH, including a link to the reporting form, is available here: https://www.rochester.edu/policies/policy/discrimination-harassment/

For purposes of this Policy, management and supervisory personnel include:

- Any employee having supervisory responsibility over employees including student employees and faculty members;
- All faculty;
- Ombuds;
- Principal Investigators on a grant or contract (these employees act in a supervisory capacity over the individuals in the lab or research they lead);
- Individuals who have been designated as a Campus Safety Authority pursuant to the Clery Act;
- Deputy Title IX Coordinators; and
- Individuals who work in any of the following departments/offices:
- Department of Public Safety,
- Student Life Offices in each of the University's schools, or
- Department of Residential Life.

Disciplinary consequences may result from failure to report as required by this Policy.

If information implicating the PADH is disclosed to University employees while they are serving in a privileged professional capacity (mental health counselors, clergy, medical providers, and rape-crisis counselors), their professional obligations control, and they are not required to report as supervisors under this Policy.

Tuition and Fees

A full listing of tuition and fees can be viewed on the Bursar's Office website at www.rochester.edu/adminfinance/bursar/billing-and-payment/billing-and-fees/.

2025–26 Schedule of Charges for Graduate Studies

*School or College**	*Tuition Rate*
School of Arts & Sciences	
Matriculated	$2,150/credit hour
Nonmatriculated	$2,150/credit hour
Engineering & Applied Sciences	$2,150/credit hour
Warner School of Education and Human Development	$1,798/credit hour
School of Medicine and Dentistry (graduate)	$2,150/credit hour
School of Medicine and Dentistry (medicine)	Flat-rate tuition $72,668/year
School of Nursing	$1,740/credit hour

School or College	*Audit Fee*
Arts & Sciences, Hajim, Nursing, SMD, Warner	$248/credit hour

* Billing schedules for Eastman, Nursing, Simon, and SMD (MD) are available on the Bursar Office webpage for tuition and fees.

Registration Fees	*Amount*
895 Continuation of Master's Enrollment (no health fees charged)	$1,070/semester
899 Master's Dissertation	$1,070/semester
995 Continuation of Doctoral Enrollment (no health fees charged)	$1,070/semester
999 Doctoral Dissertation	$1,070/semester
Other Fees	***Amount***
Activity Fee: Arts & Sciences and Engineering	$10/semester
International Student Fee†	$70/semester
Simon International Program Fee	$800/first fall semester
Student Services Fee (MD)	1st year $3,022 2nd year $1,450 3rd year $1,710 4th year $2,210
Health and Insurance Fees	**Amount**
Mandatory Health Fee: All full-time students	$476/semester
Health Insurance‡	
Fall semester	$1,806
Spring semester	$1,806
Child	$3,612/year
Two+ Children	$7,224/year

† F or J visa type
‡ The fall semester cost represents coverage for August–January; the spring semester cost represents coverage for February–July.

Payment Policy

All students are required to complete a Financial Responsibility Agreement when onboarding in UR Student. Students are unable to register for classes until this agreement is completed.

If full payment is not received by the due date, the University will assess a late payment fee of 1% of the amount past due.

A Past Due Balance hold is placed on all accounts with a past due balance of $100 or greater. Students with a Past Due Balance hold are not allowed to register for the next semester, drop/add courses, or participate in a housing lottery. Students with delinquent balances at the end of a semester may be withdrawn from the University. All prior-year balances must be paid in full before the start of the next academic year. Students who submit a check or ACH payment that is rejected by their bank are subject to cancellation of registration for the current semester and withdrawal from the University unless acceptable arrangements are promptly made.

For additional information, students should contact the Bursar's Office at bursar@rochester.edu.

Tuition Refund Policy

For tuition refunds when dropping a class while remaining enrolled, please see the applicable schedule below:

- School of Arts & Sciences and Hajim School of Engineering & Applied Sciences:
  - Part-time Undergraduate Students
  - Graduate Students
- Eastman School of Music Refund Policy and Schedule
- School of Nursing Refund Policy
- Warner School of Education — Drop/Add & Refund Policies
- Simon Business School
- SMD Graduate Students

For any student considering withdrawal or leave of absence, please see: University Policy for voluntary or involuntary withdrawal, leave of absence, or going inactive

Adjustments to Financial Aid

Federal regulations determine how the Financial Aid Office calculates the adjustments to financial aid to reflect reduced tuition and fees based on an official withdrawal or University leave of absence. Institutional financial aid is adjusted using the same percentage as determined in the Tuition Refund Policy. Earned federal financial aid is calculated using the same percentage; unearned federal aid is then returned in the following order: unsubsidized Federal Direct Loans followed by any federal Grad PLUS Loans on the student account. Additional adjustments may be made to any awarded state aid, private educational loans, and/or institutional aid based on the student's withdrawal date.

Students considering withdrawing or taking inactive status should consult with a counselor in the Financial Aid Office.

The Bursar's Office and the Financial Aid Office work together after receiving an official Change of Status notice from the Dean's Office to determine these adjustments. Every attempt is made to complete the refund calculation within 30 days of the change of status.

Financial Awards

Many students are able to pursue graduate studies by receiving financial aid from the University. Students should also apply for fellowships granted by private foundations, the federal government (e.g., the National Science Foundation), and various state organizations.

It is the responsibility of all graduate students to inform the Financial Aid Office of aid they receive from non-University sources.

Graduate Fellowships and Assistantships

The schools of the University award a large number of fellowships, assistantships, and scholarships to help graduate students meet the cost of education. Whether the funds for these awards come ultimately from individuals, corporations, foundations, government agencies, or the University itself, the amount and nature of the awards are decided by officers of the University.

Awards are made for various periods of time, and all awards are contingent upon satisfactory academic progress. Awards may be terminated at any time if academic performance is unsatisfactory.

Students also may apply for and win individual fellowships from agencies external to the University, such as foundations and government agencies such as NIH and NSF. For fellowships awarded directly to students from non-University sources, the term of the grant is up to the donor. Nevertheless, holders of non-University fellowships may be terminated from a degree program during the term of the award if they do not maintain satisfactory academic standing.

Graduate fellowships are intended to further the recipients' education, and recipients are expected to devote full time to their studies and to any required teaching, research, or training.

Acceptance of Departmental Financial Assistance

The University of Rochester, as a member of the Council of Graduate Schools in the United States, subscribes to the following statement, which has been adopted by most of the leading graduate schools in North America:

"Acceptance of an offer of financial support (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. In that context, the conditions affecting such offers and their acceptance must be defined carefully and understood by all parties.

"Students are under no obligation to respond to offers of financial support prior to April 15; earlier deadlines for acceptance of such offers violate the intent of this resolution. In those instances, in which a student accepts an offer before April 15 and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer without first obtaining a written release from the institution

to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer. It is further agreed by the institutions and organizations subscribing to the above resolution that a copy of this resolution should accompany every scholarship, fellowship, traineeship, and assistantship offer."

Financial Assistance

Federal Aid Program: Graduate students may borrow an unsubsidized loan through the Federal Direct Loan program. Students must be a citizen or eligible non-citizen, registered for at least part-time status (a minimum of 6 credit hours), and matriculated in a degree-seeking program to receive these loans. The actual amount a student is eligible to borrow cannot exceed the University of Rochester's cost of attendance minus any other assistance received (including departmental awards) up to a maximum of $20,500/academic year. Additional federal loans are available through the federal Grad PLUS Loan program. Students must complete the free application for federal student aid to apply.

Veteran Education Benefits

Veterans and military dependents are able to use their VA education benefits, including:

- Post 9/11 GI Bill®
- Montgomery Bill®
- Survivors' and Dependents' Educational Assistance (DEA)
- Veteran Readiness and Employment

Additionally, the University of Rochester is a proud participant of the Yellow Ribbon Program.

Eligible students must provide proof of education benefits (statement of benefits from va.gov, certificate of eligibility, or a screenshot from eBenefits). Students who wish to be considered for additional assistance should complete the Free Application for Federal Student Aid (FAFSA).

In accordance with Title 38 US Code 3679 subsection (e), this school adopts the following additional provisions for any students using U.S. Department of Veterans Affairs (VA) Post 9/11 G.I. Bill® (Ch. 33) or Veteran Readiness and Employment (Ch. 31) benefits, while payment to the institution is pending from the VA. This school will not:

- Prevent nor delay the student's enrollment
- Assess a late penalty fee to the student
- Require the student to secure alternative or additional funding
- Deny the student access to any resources available to other students who have satisfied their tuition and fee bills to the institution, including access to classes, libraries, or other institutional facilities

However, to qualify for this provision, such students may be required to:

- Produce the certificate of eligibility by the first day of class
- Provide written request to be certified
- Provide additional information needed to properly certify the enrollment as described in other institutional policies

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government website at www.benefits.va.gov/gibill

University Credit-Hour Policy and Compliance

All University of Rochester degree and certificate programs are approved by the New York State Education Department (NYSED). The University of Rochester's credit-hour calculations for degree and certificate programs follow NYSED guidelines, which are based on the U.S. Department of Education's definition of credit hour. The faculty in each school is responsible for all aspects of the curriculum and degree program requirements. Each school has a faculty curriculum committee that reviews proposed new and revised courses and degree programs, including the credit hours associated with each.

See below for further details regarding University of Rochester Policies for Credit Hours for Online Teaching and the Simon Business School.

NYSED—Credit Hour Definition

All courses and degree programs at the University must comply with Section 50.1 (o) of the New York State Commissioner of Education Regulations: Semester hour means a credit, point, or other unit granted for the satisfactory completion of a course that requires at least 15 hours (of 50 minutes each) of instruction and at least 30 hours of supplementary assignments, except as otherwise provided pursuant to section 52.2(c)(4) of this subchapter. This basic measure shall be adjusted proportionately to translate the value of other academic calendars and formats of study in relation to the credit granted for study during the two semesters that comprise an academic year. Source: NYSED Commissioner's Regulations Concerning Program Registration: 50.1

Definitions: https://govt.westlaw.com/nycrr/Document/Ieca5c8abc22111dd97adcd755bda2840?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=%28sc.Default%29

United States Department of Education—Credit Hour Definition

The U.S. Department of Education defines credit hour as an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

1. one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work for

approximately 15 weeks for one semester or trimester hour of credit, or 10 to 12 weeks for one quarter hour of credit, or the equivalent amount of work over a different amount of time; or,

2. at least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

Middle States Commission on Higher Education

The Middle States Commission on Higher Education expects all candidates and accredited institutions to demonstrate that they use acceptable and consistent methods for assigning credit hours to all courses and programs of study. The credit hour is defined by the U.S. Department of Education as a basic institutional measure of the level of instruction and academic rigor that establishes eligibility for federal funding.

Source: MSCHE Credit Hour Policy July 1, 2022. https://www.msche.org/2022/06/29/msche-policy-update-effective-july-1-2022/

Online Teaching and Learning Credit Hours

The University of Rochester is committed to making each online course equivalent to its face-to-face counterpart, which includes offering the same minimum level of instructional time and supplemental assignments as required by the New York State Education Department for each credit (i.e., at least 15 hours of 50 minutes each of instruction and at least 30 hours of supplementary assignments). However, in an online course, instructional time may take different forms, including but not limited to a combination of online synchronous class sessions, recorded lectures and narrated PowerPoint presentations, instructor-facilitated asynchronous discussion boards, instructor-facilitated asynchronous audio/video interaction, instructor-facilitated long-term projects, and one-on-one video communications with instructors.

Simon Business School

Policy for Credit Hours for Graduate Study

- Most Simon graduate-level courses follow a calendar based on two seven-week "mini-semester" terms per semester. To maintain compatibility with the semester calendar followed by most units at the University of Rochester, Simon uses semester-based credit hours to denominate credit hours for its courses.
- The typical course offered in Simon's MS and MBA (full-time, part-time, and executive) programs bears 2.5 credit hours. Based on the above definitions of a credit hour, such courses require 37.5 instructional hours of 50 minutes each (i.e., 31.25 actual hours of 60 minutes). Instructional hours consist of instructor-led lectures, instructor-created videos, and equivalent academic activities that can include required recitations, lab sessions, and independent academic work completed outside of class.
- In addition to these instructional hours, a course worth 2.5 credit hours also requires 75 hours (of 50 minutes each hour) of supplementary student work outside of class (i.e., two hours per instructional hour).
- Supplementary work refers to standard homework activities for students, which might include reading assignments, papers or essays, problem sets, group-work assignments, etc.
- The sum of instructional hours and supplemental work outside of class for a course bearing 2.5 credit hours must be at least 112.5 hours of 50 minutes (i.e., 93.75 actual hours).
- The total of 93.75 hours per 2.5-credit course is achieved differently for daytime, evening, and weekend classes. Daytime classes meet for 2 hours 10 minutes twice per week for seven weeks, totaling 30.33 hours.
- Evening classes meet for 3 hours 50 minutes once per week for seven weeks, totaling 26.83 hours. Weekend classes meet for 18 to 22 hours per course, supplemented with instructor videos, bringing total instructor-led learning to at least 24 hours. Accordingly, to attain 31.25 instructional hours, equivalent academic activities per course are approximately 1 hour for daytime courses, 4.5 hours for evening courses, and 7.25 hours for weekend courses. For all courses, supplementary student work outside of class totals 62.5 hours over the term.
- PhD classes entail more equivalent academic activities and are accordingly 3 credit hours. Most Simon PhD classes meet for 2 hours 10 minutes twice per week for seven weeks.
- Some classes require more weeks for students to complete projects and are therefore offered on a full-semester basis. These semester classes meet for 2.5 hours per week for 14 weeks and augment the 35 hours of instructor-led learning with 15 hours of equivalent academic activities.
- A couple of Simon graduate courses are worth only 1 credit hour and accordingly meet less often.
- Undergraduate courses offered by Simon adhere to the College Credit-Hour Policy specified above.

Credit-Hour Policy on Course Syllabi

All Simon course syllabi should state how the course meets the total instructional hours specified in the Simon credit-hour policy through the scheduled course sessions with the instructor (e.g. lectures, discussions) and equivalent academic activities.

Emergency or Temporary Closings and Other Changes in Class Schedules and University Operations

The University plans to commence and conclude classes on the dates indicated in the academic calendars. However, unforeseen circumstances or events may occur that require the University to temporarily close or otherwise make adjustments to its student life, residential housing, class schedules and format,

Credit-Hour Calculations for Graduate Courses at Simon Business School

	Daytime	Evening	Weekend	Semester	1-credit	PhD
Semester Credit Hours	2.5	2.5	2.5	4	1	3
Instructor-Led Instruction Hours per Course	30.33	26.83	24	35	11.5	30.33
Equivalent Academic Activity Hours per Course	0.92	4.42	7.25	15	1	7.17
Total Instructional Hours (sum of columns 3 & 4; 12.5 hours per credit)	31.25	31.25	31.25	50	12.5	37.5
Supplemental Student Work Hours Per Course (25 hours per credit)	62.5	62.5	62.5	100	25	75
Total Effective Hours (50 minutes per effective hour; 45 effective hours per credit)	112.5	112.5	112.5	180	45	135

method and location of instruction, educational activities, and operations because of reasons beyond the University's control. For example, such circumstances or events may include but are not limited to inclement weather, the onset of public health crises, being subject to government order(s), significant safety or security concerns, faculty illness, strikes, labor disturbances, sabotage, terrorism, war, riot, civil unrest, fire, flood, earthquake, acts of God, malfunction of University equipment (including computers), cyberattacks, unavailability of particular University facilities occasioned by damage to the premises, repairs, or other causes, as well as disruption/unavailability of utilities, labor, energy, materials, transportation, electricity, security, or the internet. If any of these or other unforeseen circumstances or events outside of the University's control occur, the University will respond as necessary and appropriate, and it assumes no liability for any interruption or adjustments made to student life, residential housing, class schedules and format, method and location of instruction, educational activities, and operations caused by these or other unforeseen circumstances or events. The University shall not be responsible for the refund of any tuition or fees in the event of any such unforeseen circumstances or events, except as may otherwise be expressly provided in the University's Leave of Absence and Withdrawal Policy or its published tuition refund schedule (found at Payments and Refunds — Office of the Bursar at rochester.edu).

Graduate Degrees Approved by New York State to Be Offered by the University in 2025

The University offers the following graduate degrees: Advanced Certificate, Advanced Diploma, Certificate of Advanced Achievement, Master of Arts, Master of Arts in Teaching, Master of Business Administration, Master of Music, Master of Public Health, Master of Science, Doctor of Business Administration, Doctor of Education, Doctor of Medicine, Doctor of Musical Arts, Doctor of Nursing Practice, and Doctor of Philosophy.

The several hundred graduate-level programs approved by the New York State Education Department as of June 2025 are listed below. A current list of approved programs can be found at https://www2.nysed.gov/heds/IRPSL1.html.

Some programs registered by the state may not be available for enrollment due to faculty changes and other factors. More detailed information about specific graduate programs is available elsewhere in this bulletin, at www.rochester.edu/gradstudies, and at program websites.

University of Rochester Inventory of Registered Programs — Graduate*

Key to Credentials

ACRT	Advanced Certificate
CAA	Certificate of Advanced Achievement
DBA	Doctor of Business Administration
DMA	Doctor of Musical Arts
DNP	Doctor of Nursing Practice
EdD	Doctor of Education
MA	Master of Arts
MBA	Masters of Business Administration
MM	Master of Music
MPH	Master of Public Health
MS	Master of Science
PhD	Doctor of Philosophy

* As of August 2025

New York State Title	Credential	NYSED Code	CIP Code
Eastman Institute for Oral Health			
Academic Dental Career Fellowship	ACRT	37760	51.0401
Dental Sciences - Clinical and Translational Science	MS	38389	51.0501
Dental Sciences - Infectious Diseases	MS	10723	51.0501
Advanced Education in General Dentistry - 2 YR	ACRT	89177	51.0502
General Dentistry Practicum	ACRT	39200	51.0502
Orofacial Pain	ACRT	21310	51.0599
Orthodontics and Dentofacial Orthopedics	ACRT	84029	51.0508
Pediatric Dentistry	ACRT	84028	51.0509
Periodontics	ACRT	84027	51.0510
Prosthodontics	ACRT	84030	51.0511
Advanced Education in General Dentistry - 1 YR	ACRT	84026	51.0502
Fellowship in Implant Dentistry	ACRT	36241	51.0511
General Practice Residency	ACRT	39855	60.0199
Research Fellowship	ACRT	39952	51.0502
Dental Public Health Residency	ACRT	41124	51.0504
Eastman School of Music			
Ethnomusicology	MA	29320	50.0905
Music Composition	MA	84048	50.0904
Music Education	MA	32499	13.1312
Music Theory	MA	10682	50.0904
Pedagogy of Music Theory	MA	19699	50.0904
Contemporary Media/Film Composition	MM	38286	50.0913
Early Music	MM	29675	50.0902
Music Composition	MM	10689	50.0904
Music Education	MM	32500	13.1312
Piano Accompanying and Chamber Music	MM	91098	50.0907
Music Composition	PhD	10686	50.0904
Music Education	PhD	13909	13.1312
Early Music	DMA	29674	50.0902
Jazz Studies And Contemp Media	DMA	27583	50.0910
Performance And Literature	DMA	10685	50.0903
Piano Accompanying and Chamber Music	DMA	91342	50.0907
Music Theory	PhD	10680	50.0904
Music Composition	DMA	10687	50.0904
Music Education	DMA	13910	13.1312
Music Education: Vocal	MA	32497	13.1312
Music Education: Instrumental	MA	32497	13.1312
Music Education: General	MA	32497	13.1312
Musicology	MA	10692	50.0905
Musicology	MA	10692	50.0905
Conducting: Choral	MM	10688	50.0906
Conducting: Orchestral	MM	10688	50.0906
Conducting: Wind Ensemble	MM	10688	50.0906
Jazz Studies and Contemporary Media: Performance	MM	78126	50.0910
Jazz Studies and Contemporary Media: Writing	MM	78126	50.0910
Music Education: Instrumental	MM	32498	13.1312
Music Education: Vocal	MM	32498	13.1312
Music Education: General	MM	32498	13.1312
Opera	MM	90318	50.0908
Opera: Stage Directing	MM	90318	50.0908
Performance and Literature	MM	10690	50.0903
Conducting: Wind Ensemble	DMA	81254	50.0906
Conducting: Orchestral	DMA	81254	50.0906
Conducting: Choral	DMA	81254	50.0906
Musicology: Critical and Historical Studies	PhD	10693	50.0905
Musicology: Ethnomusicology	PhD	10693	50.0905
Music Education	MA	32499	13.1312
Music Education	MM	32500	13.1312
Music Leadership	MA	39062	50.1003
Performance	ADIP	41788	50.0903
Conducting: Contemporary Ensembles	MM	10688	50.0906
Conducting: Contemporary Ensembles	DMA	81254	50.0906
Hajim School of Engineering & Applied Sciences			
Biomedical Engineering	PhD	10659	14.0501
Biomedical Engineering	MS	20578	14.0501
Chemical Engineering	MS	10660	14.0701
Chemical Engineering	PhD	10661	14.0701
Computer Science	MS	77107	11.0701
Computer Science	PhD	77359	11.0701
Electrical Engineering	PhD	10664	14.1001
Electrical Engineering	MS	10665	14.1001
Materials Science	PhD	10670	40.1001
Materials Science	MS	10671	40.1001
Mechanical Engineering	MS	10666	14.1901
Mechanical Engineering	PhD	10667	14.1901
Optics	PhD	10674	40.0807
Optics	MS	10675	40.0807
Alternative Energy	MS	33442	14.0799
Optics	MS	10675	40.0807
Diagnostic Imaging	MS	42564	14.0501
Chemical Engineering: Bioengineering	MS	10660	14.0701
Chemical Engineering: Sustainability, Energy and Environment	MS	10660	14.0701

New York State Title	Credential	NYSED Code	CIP Code
Chemical Engineering: Computational Modeling and Machine Learning	MS	10660	14.0701
Healthcare Data Science & AI	MS	43353	30.7001
Biomedical Engineering: Cancer Biology	PhD	10659	14.0501
Data Science: Applied Genomics	MS	37172	30.3001
Data Science	MS	37172	30.3001
Data Science	ACRT	40521	30.3001
Aerospace Engineering	MS	44319	14.0201

School of Arts & Sciences

Literary Translation	CAA	39390	16.0103
Applied Mathematics	MS	84301	27.0301
Biology	PhD	10613	26.0101
Biology	MS	10614	26.0101
Brain and Cognitive Sciences	PhD	20207	42.2704
Brain and Cognitive Sciences	MA	20208	42.2704
Chemistry	PhD	9315	40.0501
Chemistry	MS	10765	40.0501
Clinical Psychology	PhD	10788	42.2801
Comparative Literature	MA	10701	16.0104
Computational Linguistics	MS	37829	11.0102
Developmental Psychology	PhD	10790	42.2703
Economics	PhD	10799	45.0603
Economics	MA	10800	45.0603
English	PhD	10733	23.0101
English	MA	10734	23.0101
French Language or Literature	MA	10700	16.0901
Geosciences	MS	10778	40.0601
Geosciences	PhD	10777	40.0601
German Language or Literature	MA	10708	16.0501
History	MA	10801	54.0101
History	PhD	10803	54.0101
Interdepartmental Studies	MA	81067	24.0101
Interdepartmental Studies	MS	81068	24.0101
Language Documentation and Description	MA	37830	16.0102
Linguistics	MA	10737	16.0102
Linguistics	PhD	10738	16.0102
Literary Translation	MA	32788	16.0103
Mathematical Methods	MS	09318	27.0103
Mathematics	PhD	10748	27.0101
Mathematics	MA	10749	27.0101
Mathematics- Statistics	MA	77404	27.9999
Philosophy	MA	10741	38.0101
Philosophy	PhD	10742	38.0101
Photographic Preservation and Collection Management	MA	36370	50.0699
Physics	PhD	10754	40.0801
Physics	MS	10755	40.0801
Physics	MA	10757	40.0801
Physics and Astronomy	PhD	10773	40.0899
Political Science	MA	10804	45.0102
Political Science	PhD	10806	45.1001
Social - Personality Psychology	PhD	10789	42.2707
Spanish Language or Literature	MA	10713	16.0905
Sustainability	MS	38963	30.3301
Visual and Cultural Studies	PhD	91231	50.9999
Visual and Cultural Studies	MA	91341	50.9999
Political Science: Artificial Intelligence and Machine Learning	PhD	10806	45.1001
Brain and Cognitive Sciences: Neuroscience	PhD	20207	42.2704
Brain and Cognitive Sciences: Vision Science	PhD	20207	42.2704
Brain and Cognitive Sciences: Computer Science	PhD	20207	42.2704
Gender, Sexuality, and Women's Studies	ACRT	38327	05.0207
Psychological Science	MS	10785	42.2801

School of Medicine and Dentistry

Biochemistry	PhD	10627	26.0202
Biomedical Data Science	ACRT	37508	26.1103
Statistics (3-2) and Biostatistics (3-2)	MS	85431	26.1102
Biochemistry	MS	10628	26.0202
Neuroscience	MS	79190	26.1501
Biophysics	MS	10629	26.0203
Biophysics	PhD	10630	26.0203
Clinical Investigation	MS	22369	26.1311
Clinical Research Methods	ACRT	37369	51.0000
Clinical Translational Research	MS	32336	51.1401
Clinical / Medical Technology	ACRT	36319	51.1005
Epidemiology	MS	38622	26.1309
Epidemiology	PhD	27515	26.1309
Epidemiology	MS	37778	26.1309
Epidemiology	MS	38619	26.1309
Genetics	MS	19033	26.0801
Genetics	PhD	89279	26.0801
Health Services Research and Policy	PhD	19114	27.0599
Health Services Research and Policy	MS	36262	51.2211
Health Services Research and Policy	ACRT	37371	51.2211
Immunology, Microbiology and Virology	MS	35190	26.0599
Marriage and Family Therapy	MS	21345	51.1505
Marriage and Family Therapy	ACRT	21346	51.1505
Health Humanities and Bioethics	MS	36818	51.3204
Microbiology and Immunology	PhD	10623	26.0508
Microbiology and Immunology	MS	77800	26.0508

New York State Title	Credential	NYSED Code	CIP Code
Neurobiology and Anatomy	PhD	10625	26.1503
Neurobiology and Anatomy	MS	10626	26.1503
Neurobiology and Anatomy	MS	10626	26.1503
Neuroscience	PhD	10634	26.1501
Pathology	PhD	10616	26.0910
Pathology	MS	10617	26.0910
Pharmacology	MS	10618	26.1001
Pharmacology	PhD	10619	26.1001
Physiology	MS	10621	26.0901
Physiology	PhD	10622	26.0901
Public Health	MPH	10728	51.2201
Public Health	ACRT	37372	51.2201
Regulatory Science	ACRT	37942	26.1201
Statistics	PhD	77405	27.0501
Statistics	MA	78071	27.0501
Statistics	MA	78071	27.0501
TEAM: Biomanufacturing and Therapeutic Development	MS	37453	15.0000
Toxicology	PhD	10636	26.1004
Toxicology	MS	10637	26.1004
Translational Biomedical Science	PhD	31994	26.0102
Experimental Therapeutics	ACRT	37370	51.0719
Analytic Epidemiology	ACRT	37373	26.1309
Trial-Based Clinical Research	ACRT	39901	51.0719
Environmental Studies	MS	10607	03.0103
Biostatistics	MS	85430	26.1102
Public Health	MPH	10728	51.2201
Medical Pharmacology	MS	40936	26.1001
Public Health	ACRT	37372	51.2201
Clinical Research Methods	ACRT	37369	51.0000
Genetics: Bioinformatics	PhD	89279	26.0801
Genetics: Cancer Biology	PhD	89279	26.0801
Genetic Counseling	MS	42068	26.0806
Pathology: Cancer Biology	PhD	10616	26.0910
Pathology: Bioinformatics	PhD	10616	26.0910
Microbiology and Immunology: Bioinformatics	PhD	10623	26.0508
Medical Physics	MS	42626	51.2205
Biochemistry: Bioinformatics	PhD	10627	26.0202
Biochemistry: Cancer Biology	PhD	10627	26.0202
Translational Biomedical Science: Computer Science	PhD	31994	26.0102
Microbiology and Immunology: Cancer Biology	PhD	10623	26.0508
Pharmacology: Biostatistics	PhD	10619	26.1001
Physiology: Biostatistics	PhD	10622	26.0901
Clinical Bioethics	ACRT	43177	51.3201
Toxicology: Cancer Biology	PhD	10636	26.1004
Toxicology: Bioinformatics	PhD	10636	26.1004
Public Health	MPH	10728	51.2201
Health Humanities and Bioethics: Medicine, History and Culture	MS	36818	51.3204
Translational Biomedical Science: Clinical Research Methods	PhD	31994	26.0102
Microbiology and Immunology: Virology	PhD	10623	26.0508
Health Humanities and Bioethics: Clinical and Translational Ethics	MS	36818	51.3204
Microbiology and Immunology: Microbiology	PhD	10623	26.0508
Microbiology and Immunology: Immunology	PhD	10623	26.0508
Translational Biomedical Science: Bioinformatics	PhD	31994	26.0102

School of Nursing

Psychiatric Mental Health Nurse Practitioner Across the Lifespan	ACRT	35001	51.3810
Leadership in Health Care Systems	MS	28042	51.0702
Neonatal Nurse Practitioner	ACRT	26155	51.3806
Clinical Nurse Leader	MS	30403	51.3820
Clinical Nurse Leader	ACRT	33536	51.3820
Family Nurse Practitioner	MS	20269	51.3805
Adult-Gerontology Acute Care Nurse Practitioner	ACRT	21394	51.3814
Adult-Gerontology Primary Care NP	ACRT	21395	51.3803
Nursing Education	MS	37503	51.3203
Nursing Education	ACRT	37504	51.3203
Pediatric Nurse Practitioner	MS	10722	51.3809
Pediatric Nurse Practitioner	ACRT	91005	51.3809
Pediatric Nurse Practitioner / Neonatal Nurse Practitioner	MS	22500	51.3806
Family Nurse Practitioner	ACRT	21396	51.3805
Psychiatric Mental Health Nurse Practitioner Across the Lifespan	MS	34889	51.3810
Adult-Gerontology Acute Care Nurse Practitioner	MS	91007	51.3814
Nursing And Health Science	PhD	78072	51.3808
Adult-Gerontology Primary Care Nurse Practitioner	MS	32666	51.3803
Nursing Education - Clinical	ACRT	40185	51.3203
Nursing (BS) and Family Nurse Practitioner (MS)	MS	26706	51.3805
Nursing RN (BS) and Psychiatric Mental Health Nurse Practitioner Across the Lifespan (MS)	MS	34890	51.3810
Nursing (BS) and Pediatric Nurse Practitioner (MS)	MS	26704	51.3809
Nursing Education (MS) and Nursing and Health Science (PhD)	MS	37505	51.3203
Nursing Education (MS) and Nursing and Health Science (PhD)	PhD	37505	51.3808

New York State Title	Credential	NYSED Code	CIP Code
Nursing (BS) and Adult - Gerontology Acute Care Nurse Practitioner (MS)	MS	26703	51.3814
Nursing (BS) and Psychiatric Mental Health Nurse Practitioner Across the Lifespan (MS)	MS	34891	51.3810
Nursing RN (BS) and Pediatric Nurse Practitioner (MS)	MS	84160	51.3809
Nursing RN (BS) and Pediatric Nurse Practitioner / Neonatal Nurse Practitioner (MS)	MS	22502	51.3806
Nursing (BS) and Adult - Gerontology Primary Care Nurse Practitioner (MS)	MS	33760	51.3803
Nursing RN (BS) and Nursing Education (MS)	MS	37502	51.3203
Adult Gerontology Acute Care Nurse Practitioner MS / Nursing and Health Science PhD	PhD	24130	51.3808
Family Nurse Practitioner MS / Nursing and Health Science PhD	PhD	24127	51.3808
Adult Gerontology Primary Care Nurse Practitioner MS / Nursing and Health Science PhD	MS	24128	51.3803
Adult Gerontology Primary Care Nurse Practitioner MS / Nursing and Health Science PhD	PhD	24128	51.3808
Nursing RN (BS) and Family Nurse Practitioner (MS)	MS	20271	51.3805
Nursing RN (BS) and Adult - Gerontology Acute Care Nurse Practitioner (MS)	MS	91014	51.3814
Nursing RN (BS) and Adult - Gerontology Primary Care Nurse Practitioner (MS)	MS	32667	51.3803
Pediatric NP / Neonatal NP (MS) and Nursing and Health Science (PhD)	MS	24125	51.3806
Pediatric NP / Neonatal NP (MS) and Nursing and Health Science (PhD)	PhD	24125	51.3808
Pediatric Nurse Practitioner (MS) and Nursing and Health Science (PhD)	MS	24129	51.3809
Pediatric Nurse Practitioner (MS) and Nursing and Health Science (PhD)	PhD	24129	51.3808
Family Nurse Practitioner MS / Nursing and Health Science PhD	MS	24127	51.3805
Psychiatric Mental Health Nurse Practitioner Across the Lifespan (MS) and Nursing and Health Science (PhD)	MS	34893	51.3810
Psychiatric Mental Health Nurse Practitioner Across the Lifespan (MS) and Nursing and Health Science (PhD)	PhD	34893	51.3808
Adult Gerontology Primary Care Nurse Practitioner	DNP	33535	51.3803
Clinical Nurse Leader	DNP	31680	51.3820
Family Nurse Practitioner	DNP	31684	51.3805
Pediatric Nurse Practitioner	DNP	31683	51.3809
Adult-Gerontology Acute Care Nurse Practitioner	DNP	31681	51.3814
Psychiatric Mental Health Nurse Practitioner Across the Lifespan	DNP	34892	51.3810
Adult Gerontology Acute Care Nurse Practitioner MS / Nursing and Health Science PhD	MS	24130	51.3814
Adult Gerontology Primary Care Nurse Practitioner	MS	32666	51.3803
Clinical Nurse Leader	MS	30403	51.3820
Family Nurse Practitioner	MS	20269	51.3805
Pediatric Nurse Practitioner	MS	10722	51.3809
Adult-Gerontology Acute Care Nurse Practitioner	MS	91007	51.3814
Psychiatric Mental Health Nurse Practitioner Across the Lifespan	MS	34889	51.3810
Nursing RN	MS	30403	51.3820
Nursing RN	MS	28042	51.0702
Pediatric NP-Acute Care	ACRT	41197	51.3809
Nursing Practice	DNP	43855	51.3818
Nursing - Direct Entry into Practice	MS	44014	51.3801

Simon Business School

Business Administration	PhD	10641	52.0201
Business Administration	MBA	10639	52.0201
Business Administration for Executives	MBA	40407	52.0201
Business Administration - Executive	MBA	10639	52.0201
Business Administration	MBA	10639	52.1399
Business Administration for Professionals	MBA	40406	52.1399
Business Administration for Executives	MBA	40407	52.1399
Business Administration for Professionals	MBA	40406	52.0201
Business Administration for Executives	MBA	40407	52.0201
Business Analytics	MS	37685	52.1399
Business Administration	MS	10642	52.0201
Business Administration / Medicine	MBA	22196	52.0201
Finance	MS	34363	52.1399
Finance	MS	34363	52.0801
Management	MS	36027	52.0201
Marketing Analytics	MS	37686	52.1399
Accountancy	MS	29991	52.1399
Medical Management	MS	40029	52.0201
Business Fundamentals	MS	40937	52.0201
Business Research	MS	40938	52.0201

New York State Title	Credential	NYSED Code	CIP Code
Business Analytics and Applied AI	MS	41956	52.1399
Business Analytics and Applied AI	MS	41956	52.1399
Health Care Finance	ACRT	42908	52.0201
Health Care Strategy and Marketing	ACRT	42909	52.0201
Accountancy	MS	29991	52.1399
Business Administration for Professionals	MBA	40406	52.0201
Business Administration for Professionals	MBA	40406	52.0201
Artificial Intelligence in Business	MS	43656	52.1399
Health Care Leadership	ACRT	43824	52.0201
Health Care Analytics and Artificial Intelligence	ACRT	43823	52.1399
Finance: Investment Management and Financial Analysis	MS	34363	52.1399
Finance: Corporate Financial Strategy and Investment Banking	MS	34363	52.1399
Finance: Financial Technology and Innovation	MS	34363	52.1399
Business Administration	DBA	44491	52.0299

Warner School of Education

Digitally-Rich Teaching in K-12 Schools	ACRT	38681	13.0501
Education For Healthcare Professionals	ACRT	39335	13.1327
Online Teaching	ACRT	37834	13.1211
School Building Leadership	ACRT	28986	13.0499
Mental Health to School Counseling	ACRT	37963	13.1101
School Counseling to Mental Health Counseling	ACRT	38201	51.1508
Inclusion Early Childhood Education (birth to grade 2)	ACRT	25040	13.1015
Teaching Students with Significant Disabilities	ACRT	34426	13.1001
Program Evaluation	ACRT	37835	13.0699
Teaching English as Foreign Language (Non Certification)	ACRT	37949	13.1401
Early Childhood Education (birth to grade 2)	ACRT	25034	13.1210
Childhood Education (grades 1-6)	ACRT	25035	13.1202
Teaching English to Speakers of Other Languages (grades K-12)	ACRT	25037	13.1401
Urban Teaching and Leadership	ACRT	37941	13.0410
Mental Health Counseling and Supervision	EdD	30702	51.1508
School Building Leadership	MS	28983	13.0499
Education Policy	MS	32772	44.0502
Clinical Mental Health Counseling	MS	30586	51.1508
Program Evaluation	MS	37836	13.0699
Early Childhood Education (Non Teacher Certification)	MS	36352	13.1210
Elementary Education (Non Teacher Certification)	MS	36353	13.1202
Inclusion and Special Education (Non Teacher Certification)	MS	36354	13.1001
Social Studies Education (Non Teacher Certification)	MS	36358	13.1318
Mathematics Education (Non Teacher Certification)	MS	36356	13.1311
Literacy Education (Non Teacher Certification)	MS	36355	13.1315
Science Education (Non Teacher Certification)	MS	36357	13.1316
Applied Behavior Analysis and Human Development	MS	39124	42.2814
Health Professions Education	MS	34087	13.1327
Online Teaching and Learning	MS	36980	13.1211
Teaching Students with Significant Disabilities	MS	34425	13.1001
Teaching ESOL (English to Speakers of Other Languages)	MS	34854	13.1401
Applied Behavior Analysis	ACRT	39125	42.2814
Education	PhD	10644	13.0101
Adolescence Education: Biology (grades 7-12)	MS	25021	13.1322
Adolescence Education: Chemistry (grades 7-12)	MS	25022	13.1323
Adolescence Education: Earth Science (grades 7-12)	MS	25024	13.1337
Adolescence Education: English (grades 7-12)	MS	25019	13.1305
Adolescence Education: French (grades 7-12)	MS	25042	13.1325
Adolescence Education: Mathematics (grades 7-12)	MS	25018	13.1311
Adolescence Education: Physics (grades 7-12)	MS	25023	13.1329
Adolescence Education: Social Studies (grades 7-12)	MS	25020	13.1318
Adolescence Education: Spanish (grades 7-12)	MS	25043	13.1330
Adolescence Education: Foreign Languages (German grades 7-12)	MS	25044	13.1326
School District Leadership	ACRT	28988	13.0499
Adolescence Education: Biology (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Biology (grades 5-6)	ACRT	25027	13.1203
Adolescence Education: English (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: English (grades 5-6)	ACRT	25027	13.1203
Adolescence Education: French (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: German (grades 7-12)	ACRT	25027	13.1205

New York State Title	Credential	NYSED Code	CIP Code
Adolescence Education: Social Studies (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Social Studies (grades 5-6)	ACRT	25027	13.1203
Adolescence Education: Italian (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Chemistry (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Chemistry (grades 5-6)	ACRT	25027	13.1203
Adolescence Education: Latin (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Mathematics (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Mathematics (grades 5-6)	ACRT	25027	13.1203
Adolescence Education: Physics (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Physics (grades 5-6)	ACRT	25027	13.1203
Adolescence Education: Spanish (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: General Science (grades 7-12)	ACRT	25027	13.1205
Middle Childhood Specialist (General Science 5-12; for current science teachers w/Master's degree)	ACRT	25025	13.1206
Adolescence Education: Chinese (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Earth Science (grades 7-12)	ACRT	25027	13.1205
Adolescence Education: Earth Science (grades 5-6)	ACRT	25027	13.1203
Educational Administration: K-12 Schools	EdD	13901	13.0499
Counseling and Human Development	EdD	13899	13.1101
Counseling and Human Development	EdD	13899	51.1508
Counseling and Human Development	EdD	13899	19.0701
Educational Administration: Higher Education	EdD	13901	13.0406
Teaching and Curriculum	EdD	13903	13.0301
Educational Administration	MS	13902	13.0499
School District Leadership	MS	28989	13.0499
Adolescence Education: Latin (grades 7-12)	MS	25045	13.1333
Adolescence Education: Foreign Languages (Chinese - grades 7-12)	MS	25044	13.1306
Adolescence Education: Foreign Languages (Italian - grades 7-12)	MS	25044	13.1306
Human Development	MS	81054	19.0701
Human Development	MS	81054	19.0706
Human Development	MS	81054	19.0701

New York State Title	Credential	NYSED Code	CIP Code
Educational Administration: Higher Education	MS	13902	13.0406
Educational Administration: Higher Education Student Affairs	MS	13902	13.0406
Educational Administration: Student Affairs and Academic and Career Advising	MS	13902	13.0406
Professional Study: Generalist (Childhood Education - grades 1-6)	MS	25031	13.1202
Professional Study: Generalist (Early Childhood Education - birth-grade 2)	MS	25031	13.1202
Inclusion Early Childhood Education (birth-grade 2)	MS	25055	13.1015
Inclusive Childhood Education (grades 1-6)	MS	25056	13.1017
Inclusion Adolescent Education as Generalist	MS	34427	13.1019
Professional Study: Middle Childhood and Adolescence Education (Biology 7-12)	MS	25032	13.1205
Professional Study: Generalist (Inclusive Childhood Education - grades 1-6)	MS	25031	13.1017
Professional Study: Generalist (Inclusive Early Childhood Education - birth - grade 2)	MS	25031	13.1015
Professional Study: Generalist (Secondary Inclusion - grades 7-12)	MS	25031	13.1019
Professional Study: Middle Childhood and Adolescence Education (English 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (French 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (German 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (Social Studies 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (Italian 7-12)	MS	25032	13.1306
Professional Study: Middle Childhood and Adolescence Education (Chemistry 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (Latin 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (Mathematics 7-12)	MS	25032	13.1205
Middle Child Education for Adolescence Education Teachers: Mathematics (grades 7-12, 5-6 ext.)	MS	25030	13.1203
Inclusion Adolescence Education: Mathematics (grades 7-12), Generalist (grades 7-12)	MS	25068	13.1019

New York State Title	Credential	NYSED Code	CIP Code
Professional Study: Middle Childhood and Adolescence Education (Physics 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (Spanish 7-12)	MS	25032	13.1205
Professional Study: Generalist (ESOL 7-12)	MS	25031	13.1401
Professional Study: Middle Childhood and Adolescence Education (Distance Option)	MS	25032	13.1205
Professional Study: Generalist (Distance Option)	MS	25031	13.1210
Middle Child Education for Adolescence Education Teachers (Distance Option)	MS	25030	13.1203
Professional Study: Middle Childhood and Adolescence Education (Chinese 7-12)	MS	25032	13.1205
Professional Study: Middle Childhood and Adolescence Education (Earth Science 7-12)	MS	25032	13.1205
Early Childhood Education (birth to grade 2)	MS	25005	13.1210
Childhood Education (grades 1-6)	MS	25006	13.1202
Teaching and Curriculum	MS	13904	13.0301
Teaching English to Speakers of Other Languages (grades K-12)	MS	25036	13.1401
Education: Educational Policy and Theory	PhD	10644	44.0502
Education (w/ spec. in Counseling and Counselor Education)	PhD	10644	13.0101
Education (w/ spec. in Human Development in Educational Contexts)	PhD	10644	19.0701
Education: Higher Education	PhD	10644	13.0406
Education (w/ spec. in Teaching, Curriculum and Change)	PhD	10644	13.0101
Teacher Leadership	ACRT	39888	13.1299
Teaching ESOL (English to Speakers of Other Languages)	MS	34854	13.1401
Inclusion and Special Education (Non Teacher Certification)	MS	36354	13.1001
Mind/Body Healing and Wellness	ACRT	40149	13.9999
Leadership in Disability and Inclusive Practices	ACRT	41012	05.0210
School Counseling - Initial/ Professional	MS	41538	13.1101
Elementary Math Specialist	ACRT	42423	13.9999
Addictions Counseling	ACRT	42455	51.9999
Health Professions Education Leadership	EdD	42947	51.3202
Teaching Computer Science K-12	ACRT	42731	13.1321
Teaching Computer Science K-12	MS	42726	13.1321
School Counseling to Clinical Mental Health Counseling	ACRT	38201	51.1508
Educational Administration	EdD	13901	13.0499
Health Professions Education	MS	34087	13.1327
Health Professions Education Leadership	EdD	42947	51.3202
Online Teaching and Learning	MS	36980	13.1211
Adolescence Education: Social Studies	MS	25020	13.1318
Adolescence Education: Biology	MS	25021	13.1322
Education Policy	MS	32772	44.0502
Adolescence Education: Chemistry	MS	43947	13.1323
Adolescence Education: Foreign Languages (French 7-12)	MS	43948	13.1306
Adolescence Education: Foreign Languages (Spanish 7-12)	MS	43948	13.1306
Adolescence Education: Foreign Languages (German 7-12)	MS	43948	13.1306
Teaching Students with Disabilities, All Grades	ACRT	44441	13.1001
Literacy (All Grades)	ACRT	25039	13.1315
Teaching Students with Disabilities, All Grades	MS	34424	13.1001
Literacy (All Grades)	MS	25038	13.1315

School of Medicine and Dentistry

Medicine	MD	10727	51.1201

School of Arts & Sciences

Administrative Officers

Duje Tadin
Interim Dean of the School of Arts and Sciences

Nick Vamivakas
Dean of Graduate Education and Postdoctoral Affairs

Kristina Lantzky-Eaton
Assistant Dean of Graduate Education and Postdoctoral Affairs

Committee on Graduate Studies

Anna Rosensweig
Visual and Cultural Studies

William Miller
English

Brianna Theobald
History

Jens Kipper
Philosophy

Donatella Stocchi-Perucchio
Literary Translation

Ryan Prendergast
Modern Languages and Cultures

Harry Reis
Psychology

John Singleton
Economics

David Primo
Political Science

Maya Abtahian
Linguistics

Jude Mitchell
Brain and Cognitive Sciences

Dragony Fu
Biology

Ellen Matson
Chemistry

Vasilii Petrenko
Earth and Environmental Sciences

Sevak Mkrtchyan and Allan Greenleaf
Mathematics

Segev BenZvi
Physics

Ajay Anand
Data Science

School Mission Statement

The School of Arts and Sciences aims to engage, educate, enrich, and empower all members of our community. We advance this mission through personalized educational and research opportunities, experiential offerings, a global view of research and creative activity, and the intentional cultivation of a culture in which all are respected and critical thinking, interdisciplinarity, and synergy are commonplace.

School-Level Graduate Awards

- Paul F. Slattery Fellowship
- Dean's Dissertation Fellowship
- Dean's Post-Field Research Dissertation Write-up Fellowships
- Outstanding Dissertation Awards

Anthropology

John Osburg
Chair

The Department of Anthropology at the University of Rochester specializes in sociocultural anthropology, with faculty who have lived and worked with people in rural and urban communities around the world. Our collective expertise covers classical anthropological questions regarding: family and kinship, myth and ritual, ethnicity and race, gender and sexuality, and capitalism and exchange. The department also explores contemporary preoccupations with food, environment, law and human rights, global religions and science, and technology.

https://www.sas.rochester.edu/ant/

Graduate Faculty Information

Fathimath Anu Ahmed, PhD, *Boston University*
Assistant Professor of Anthropology
Primary Appointment(s): Anthropology

Kristin Doughty, PhD, *University of Pennsylvania*
Associate Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Robert J. Foster, PhD, *University of Chicago*
Professor of Anthropology, Professor of Visual and Cultural Studies
Richard L. Turner Professor of Humanities
Primary Appointment(s): Anthropology

Thomas P. Gibson, PhD, *London School of Economics*
Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Susan B. Anthony Institute

Kathryn Mariner, PhD, *University of Chicago*
Associate Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

John Osburg, PhD, *University of Chicago*
Associate Professor of Anthropology
Chair, Department of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Susan B. Anthony Institute

Xiaolei Qu, PhD, *University of Virginia*
Assistant Professor of Anthropology
Primary Appointment(s): Anthropology

Daniel Reichman, PhD, *Cornell University*
Professor of Anthropology
Director of Undergraduate Studies
Primary Appointment(s): Anthropology

Llerena G. Searle, PhD, *University of Pennsylvania*
Associate Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Susan B. Anthony Institute

Admissions

The Department of Anthropology does not offer graduate programs. However, it does offer graduate courses for students enrolled in University graduate programs.

Academics

The Department of Anthropology offers the following graduate courses for students enrolled in University graduate programs.

GRADUATE COURSE TITLES

ANTH 405. Theories and Debates: Culture vs. Ontology
ANTH 407. Radical Social Theory
ANTH 416. Medical Anthropology
ANTH 422. Materiality and Meaning
ANTH 426. Culture and Consumption
ANTH 432. Indigenous People's Movement
ANTH 433. Cultural Politics of Prison Towns
ANTH 456. American Empire
ANTH 457. Contemporary Chinese Society
ANTH 466. Anthropology of Globalization
ANTH 508. Advanced Topic Seminar

Brain and Cognitive Sciences

Dora Biro
Chair
Jude Mitchell
Graduate Program Director

Graduate education is a central part of academic life in the department. All of our faculty are invested in research structured to include graduate students as essential partners. Graduate students are our junior colleagues and future peers—people who enrich our academic lives as much as we enrich theirs—and we commit a great deal to their training.

The essence of our graduate program is training for research in the disciplines that constitute the brain and cognitive sciences. Initially a student's research is likely to be undertaken with close guidance from a member of the faculty, but we expect and encourage students to develop rapidly into independent researchers, and to become major contributors to the intellectual life of the department.

We attach great importance to the collegiality of contact among graduate students, postdoctoral fellows, and faculty. The department fosters this by encouraging students to work with multiple faculty members and with one another. We also help students develop the skills to seek independent funding through a formal grant-writing course that engages multiple faculty members.

We value the public discussion of our science, and through a range of research meetings, colloquia, and lecture series, students and faculty regularly come together. We provide structured opportunities for students to present their work to the department in different formats, to aid the development of strong oral and written communication skills. We encourage students to discuss their work in the larger scientific community, and the department supports students' attendance at scientific meetings.

Mission Statement and Strategic Goals

Our mission for the program is to train the next generation of cognitive and perceptual scientists, who will advance our understanding of the mechanisms of higher-level brain function. We hope to train flexible and creative students who will be able to combine classical behavioral approaches with computational tools from data science as well as a variety of cutting-edge experimental approaches from the domains of neuroscience, computer science, and virtual/augmented reality. In this sense, our mission aligns very well with broader University initiatives in neuroscience, vision, data/computer science and AR/VR. We also seek to train students for a variety of career paths, especially given the rapid growth of cognitive science approaches in industry.

http://www.sas.rochester.edu/bcs/

Graduate Faculty Information

Dora Biro, PhD, *Oxford University*
Professor
Beverly Petterson Bishop and Charles W. Bishop Professor of Brain and Cognitive Sciences; Chair, Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences

Gregory DeAngelis, PhD, *University of California, Berkeley*
Professor of Brain and Cognitive Sciences, Professor of Neuroscience, Professor of Biomedical Engineering
George Eastman Professor
Primary Appointment(s): Brain and Cognitive Sciences, Neuroscience, Biomedical Engineering
Affiliation: Center for Visual Science

Manuel Gomez-Ramirez, PhD, *City University of New York Graduate Center*
Assistant Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Affiliation: Center for Visual Sciences

Ralf M. Haefner, PhD, *Oxford University*
Associate Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Physics, Computer Science, Data Science
Affiliation: Center for Visual Science

Coraline Rinn Iordan, PhD, *Stanford University*
Assistant Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience

Robert A. Jacobs, PhD, *University of Massachusetts*
Professor of Brain and Cognitive Sciences, Professor of Computer Science
Primary Appointment(s): Brain and Cognitive Sciences, Computer Science
Affiliation: Center for Visual Science

T. Florian Jaeger, PhD, *Stanford University*
Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences

Chigusa Kurumada, PhD, *Stanford University*
Associate Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences

Jude Mitchell, PhD, *University of California, San Diego*
Associate Professor of Brain and Cognitive Sciences
Director, Graduate Program
Primary Appointment(s): Brain and Cognitive Sciences
Affiliation: Center for Visual Science

Elise Piazza, PhD, *University of California, Berkeley*
Assistant Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences

Martina Poletti, PhD, *Boston University*
Associate Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience
Affiliation: Center for Visual Science

Karl Rosengren, PhD, *University of Minnesota*
Professor of Psychology, Professor of Brain and Cognitive Sciences
Primary Appointment(s): Psychology, Brain and Cognitive Sciences

Michele Rucci, PhD, *Scuola Superiore S.Anna*
Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Affiliation: Center for Visual Science

Takao Sasaki, PhD, *Arizona State University*
Associate Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences

Adam Snyder, PhD, *City University of New York Graduate Center*
Assistant Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience
Affiliation: Center for Visual Science

Duje Tadin, PhD, *Vanderbilt University*
Professor of Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience, Ophthalmology
Affiliation: Center for Visual Science

Admissions

Applying to Doctoral Programs

The department accepts students only for full-time PhD study. All applications must be submitted online. A complete application to the Department of Brain and Cognitive Sciences should include the online application for graduate study, letters of recommendation (at least two), personal statement (statement of purpose), college transcripts, optional GRE scores (not required) and TOEFL scores, if applicable.

Academics

Master's Degrees and Requirements

All BCS students must have completed 30 credits and pass the PhD qualifying exam before the end of their third year in order to receive a master's degree en passant. Students choose between one of two formats for the exam.

- Option 1: Six long essay questions
- Option 2: Review opinion paper and three long essay questions

Doctoral Degrees and Requirements

All BCS students must have completed 90 credits and are required to write a seven-page dissertation proposal to their PhD committee members in their fourth year. In their fifth year, students will defend their dissertation in a public presentation and answer questions from attendees. A closed session with the student's thesis committee will question the student further on their dissertation.

GRADUATE COURSE TITLES

BCSC 433. Statistical Speech and Language Processing
BCSC 435. Natural Language Processing
BCSC 501. Language
BCSC 502. Cognition
BCSC 504. Sensory Systems
BCSC 505. Perception and Action
BCSC 508. Cognitive Neuroscience
BCSC 509. Advanced Methods in Brain and Cognitive Sciences
BCSC 511. Behavioral Methods in Cognitive Science
BCSC 512. Computational Methods in Cognitive Science
BCSC 513. Introduction to fMRI: Imaging, Computational Analysis, and Neural Representations
BCSC 515. Applied Introduction to Signal and Systems in Brain and Cognitive Sciences
BCSC 517. Topics in Data Analysis
BCSC 519. Statistics for Brain and Cognitive Sciences
BCSC 520. Intelligent Eye
BCSC 521. Auditory Perception
BCSC 528. Special Topics in Vision
BCSC 532. Probabilistic Theories of Cognitive Processing
BCSC 535. Natural Language Processing
BCSC 536. Machine Vision
BCSC 541. Neurons, Circuits, and Systems
BCSC 542. Neuropsychology
BCSC 543. Neurochemical Foundations of Behavior
BCSC 546. Biology of Mental Disorders
BCSC 547. Computational Neuroscience
BCSC 549. Developmental Neurobiology
BCSC 557. Advanced Computational Neuroscience
BCSC 564. Sign Language Structure
BCSC 566. Adaptive Language Processing
BCSC 569. Cognitive Development
BCSC 570. Introduction to Augmented and Virtual Reality
BCSC 571. Selected Topics in Augmented and Virtual Reality
BCSC 572. Practicum in Augmented and Virtual Reality

BCSC 582. Grant Writing in Brain and Cognitive Sciences
BCSC 599. Professional Development and Career Planning
BCSC 591. PhD Readings
BCSC 594. Research Internship
BCSC 595. PhD Research
BCSC 595A. PhD Research in Absentia
BCSC 598. Supervised Teaching Assistant
BCSC 895. Continuation of Master's Enrollment
BCSC 897. Master's Dissertation
BCSC 985. Leave of Absence
BCSC 986V. Full-Time Visiting Student
BCSC 990. Summer in Residence
BCSC 995. Continuation of Doctoral Enrollment
BCSC 997. Doctoral Dissertation
BCSC 999. Doctoral Dissertation
BCSC 999A. Doctoral Dissertation in Absentia
BCSC 999B. PhD in Absentia Abroad

Biology

J. Albert C. Uy
Chair

Dragony Fu
Chair, Graduate Affairs /Academic Committee (GAAC)

The Department of Biology offers programs of research and study leading to master's and PhD degrees in a broad spectrum of disciplines, with special emphasis on the areas of 1) cellular, developmental, and molecular- biology, and 2) evolution, ecology, genetics, and genomics. We are committed to promoting diversity, equity, and inclusion in all aspects of our program, and to fostering a collaborative and supportive community that values intellectual curiosity and excellence. Our program aligns with and contributes to the University of Rochester's mission of teaching, learning, and research.

Mission Statement and Strategic Goals

Our mission is to prepare students for successful careers in academia, industry, and beyond, and to contribute to the advancement of knowledge and understanding of the natural world through innovative research. Our strategic goals are:

- PhD students entering with a baccalaureate degree in science and adequate preparation in biology usually complete the doctoral program within five to six years.
- Required and elective coursework is selected to prepare students for research and intensive study in their chosen subdiscipline.
- The PhD degree is awarded following the successful defense of a written dissertation before a committee of examiners.
- The MS in biology recognizes competence in selected subdisciplines demonstrated by successful completion of a coherent set of courses, and either defense of a thesis based upon independent research (Plan A) or adequate performance in a special comprehensive examination (Plan B). On a full-time basis, the master's program may take two to three years to complete.

https://www.sas.rochester.edu/bio/

Graduate Faculty Information

Cheeptip Benyajati, PhD, *Princeton University*
Associate Professor
Primary Appointment(s): Biology

Xin Bi, PhD, *Johns Hopkins University*
Professor
Primary Appointment(s): Biology

Jennifer Brisson, PhD, *Washington University in Saint Louis*
Professor
Primary Appointment(s): Biology

Nancy Chen, PhD, *Cornell University*
Assistant Professor
Primary Appointment(s): Biology

Gloria Culver, PhD, *University of Rochester*
Professor
Primary Appointment(s): Biology

Justin Fay, PhD, *University of Chicago*
Professor
Primary Appointment(s): Biology

James Fry, PhD, *University of Michigan*
Associate Professor
Primary Appointment(s): Biology

Dragony Fu, PhD, *University of California, Berkley*
Professor
Mercer Brugler Distinguished Teaching Professor
Primary Appointment(s): Biology

Sina Ghaemmaghami, PhD, *Duke University*
Professor
George Y. & Catherine H. Wu Professor in Chemistry; Director, Undergraduate Research
Primary Appointment(s): Biology
Joint Appointment(s): Chemistry

Karl Glastad, PhD, *Georgia Institute of Technology*
Assistant Professor
Primary Appointment(s): Biology

Vera Gorbunova, PhD, *Weizmann Institute of Science*
Professor
Doris Johns Cherry Professor of Biology
Primary Appointment(s): Biology

Mark Hibbins, PhD, *Indiana University Bloomington*
Assistant Professor
Primary Appointment(s): Biology

David Lambert, PhD, *University of Arizona*
Professor
Primary Appointment(s): Biology

Amanda Larracuente, PhD, *Cornell University*
Professor
Primary Appointment(s): Biology

Anne S. Meyer, PhD, *Yale University*
Associate Professor
Primary Appointment(s): Biology
Affiliation: Materials Science

Benjamin Peter, PhD, *University of California, Berkeley*
Assistant Professor
Primary Appointment(s): Biology

Douglas Portman, PhD, *University of Pennsylvania*
Professor
Primary Appointment(s): Biology, Biomedical Genetics (SMD), Neuroscience (SMD)

Daven Presgraves, PhD, *University of Rochester*
Professor
Dean's Professor of Biology
Primary Appointment(s): Biology

Andrei Seluanov, PhD, *Weizmann Institute of Science*
Professor
Primary Appointment(s): Biology

Elaine Sia, PhD, *Columbia University*
Professor
Senior Vice Provost, Academic Excellence
Primary Appointment(s): Biology

Floria Uy, PhD, *University of Miami*
Assistant Professor
Primary Appointment(s): Biology

J. Albert C. Uy, PhD, *University of Maryland, College Park*
Professor
Chair, Biology
Primary Appointment(s): Biology

Ning Wang, PhD, *The Ohio State University*
Assistant Professor
Primary Appointment(s): Biology

Michael Welte, PhD, *University of Chicago*
Professor
Primary Appointment(s): Biology

Admissions

Applying to Doctoral Programs

The graduate programs in Biology at the University of Rochester provide rigorous academic training and research opportunities that enable students to become independent, creative, and critical thinkers in the biological sciences.

Students applying to the Biology PhD programs must have a BS or BA with majors in biological sciences or a related field. A master's degree is not required to apply to the PhD program. The minimum preparation is usually one year each in physics, calculus, and organic chemistry.

Graduate student applications must be submitted using the online application system and include a personal statement, college transcripts, TOEFL or IELTS scores (if applicable), and three letters of recommendation. GRE scores are optional. Transfer students are considered for admission using the same criteria.

PhD students are admitted to the program on a full-time basis only and offered at least five years of support (stipend, tuition, individual health care, and mandatory health fee)

provided they are making satisfactory academic progress toward their degree.

Applying to Master's Programs

Many students complete a Master of Science in biology degree before continuing their education in medical or veterinary school, while others earn their advanced degrees as part of their teaching career.

Students applying to the Biology master's programs must have a BS or BA with majors in biological sciences or a related field.

Graduate student applications must be submitted using the online application system and include a personal statement, college transcripts, TOEFL or IELTS scores (if applicable), three letters of recommendation, and optional GRE scores.

The master's programs may be admitted on a full-time or part-time basis and take from two to five years to complete.

Students select either a Plan A research-based or Plan B course-based program; both require a minimum of 30 credit hours for completion.

The department does not offer financial support to master's students. Students may apply for financial aid through University Financial Aid & Scholarships.

Academics

Master's Degrees and Requirements

The biology master's programs (both Plan A and Plan B) require a minimum of 30 credit hours for completion.

Plan A requires an oral examination of the student's research and thesis and has six to 12 research credits. Students must complete at least 18 credits of formal courses offered in biology or as approved by the GAAC.

Plan B allows students to tailor coursework to their specific interests. Students may take a maximum of six research credits and must take at least six courses offered by the department. Plan B students take a comprehensive written exam for their degree.

Doctoral Degrees and Requirements

The PhD program requires a minimum of 90 credit hours, including required and elective coursework, seminars, and research to register for a thesis defense.

First-year PhD students rotate through three different research laboratories before selecting a permanent advisor at the end of year one.

PhD are required to serve as teaching assistants for two semesters (usually in the spring semester of year one and in the fall of year two).

Admission to candidacy for the PhD degree requires the successful completion of a comprehensive qualifying exam, which includes an oral examination and defense of a thesis proposal. This exam is usually completed by the end of the second year.

Upon passing the qualifying exam, PhD candidates may request an *en passant* master's degree.

PhD candidates meet annually with their thesis advisory committee to critically evaluate results, assign priorities, and consider alternative experimental strategies leading toward their thesis defense.

Thesis advisory committee meetings also include a discussion of the PhD candidate's short-term research and professional goals for the upcoming year, as well as post-graduation plans.

GRADUATE COURSE TITLES

BIOL 402. Molecular Biology
BIOL 405. Evolution
BIOL 406. Eukaryotic Genomes
BIOL 414. Biostatistics
BIOL 419L. Genomics of Quant Traits w/LAB
BIOL 420. Advanced Cell Biology
BIOL 422. Biology of Aging
BIOL 426. Developmental Biology
BIOL 443. Eukaryotic Gene Regulation
BIOL 453L. Computational Bio with Lab
BIOL 457L. Applied Genomics with Lab
BIOL 459L. Applied Population Biology w/Lab
BIOL 460. Animal Behavior
BIOL 463. Ecology
BIOL 468. Lab in Molecular, Cell, and Developmental Biology
BIOL 471. Advanced Topics in Ecology and Evolutionary Biology
BIOL 478. Biochemical Mechanisms of Cellular Processes
BIOL 480. Graduate Lab Rotation
BIOL 495. Master's Research in Biology
BIOL 516. Cell/Dev/Mol Biology Seminar
BIOL 517. Graduate Research Seminar
BIOL 580. Journal Club in E2G2
BIOL 581. Topics in Cellular, Developmental, and Molecular Biology
BIOL 584. Seminar in Evolution, Ecology, Genetics, and Genomics
BIOL 592. Classical Population Genetics
BIOL 595. PhD Research in Biology

Chemistry

Kara Bren
Chair

Ellen Matson
Director of Graduate Studies

From the University's founding in 1850 until the present day, the study of chemistry at Rochester has prospered. Our department continues to provide outstanding opportunities to undertake and accomplish significant research and engage in excellent education programs, including a PhD in chemistry. The department's program presents unrivaled opportunities for education and research in the traditional fields of analytical, biological, inorganic, organic, materials, and physical chemistry, as well as a variety of interdisciplinary areas. Faculty expertise spans virtually all areas of modern chemical research and related fields. The department is organized according to the research cluster model, emphasizing interdisciplinary research uniquely available at a relatively small research institution such as Rochester.

Our department is recognized locally and nationally by funding agencies and corporate research sponsors. In addition, the faculty continues to grow in stature, and its members have collectively received more than 45 national and University awards for research and teaching in the last five years. Approximately 105 graduate students are enrolled in our doctoral program each year. Our total research effort is further augmented by approximately 30 senior research scientists and postdoctoral fellows, assisted by experienced and dedicated scientific/technical and administrative staff. Our research infrastructure ranks among the very best in the nation, with all of the state-of-the-art instrumentation necessary for the study of modern chemistry.

Mission Statement

The University of Rochester motto is *Meliora* (loosely translated as "Ever Better"), and this ethos drives the Department of Chemistry PhD program. As a department, we strive to foster an environment that holistically supports the intellectual, professional, and personal development of students from all backgrounds.

Graduate students:

- Conduct cutting-edge, interdisciplinary research with access to advanced facilities and opportunities for collaboration
- Learn through frequent and individualized interactions with faculty, peers, and visiting scholars
- Build strong networks through structured mentorship and professional development, industry internships, and attendance at prestigious scientific conferences; and
- Enrich their experiences through programs focused on departmental, university, and community service to broaden access to and participation in the chemical sciences. Through these synergistic experiences, our graduate students likewise embody the spirit of *Meliora*, uplifting our department and the broader community in the pursuit of "Ever Better."

www.sas.rochester.edu/chm/

Graduate Faculty Information

Brandon R. Barnett, PhD, *University of California San Diego*
Assistant Professor
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Kara L. Bren, PhD, *California Institute of Technology*
Professor
Richard S. Eisenberg Professor of Chemistry; Chair, Department of Chemistry
Primary Appointment(s): Chemistry

Joseph P. Dinnocenzo, PhD, *Cornell University*
Professor
Primary Appointment(s): Chemistry

Tom Driver, PhD, *University of California*
Professor
Primary Appointment(s): Chemistry

Ignacio Franco, PhD, *University of Toronto*
Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Physics
Affiliation: Materials Science

Alison J. Frontier, PhD, *Columbia University*
Professor
Primary Appointment(s): Chemistry

Pengfei (Frank) Huo, PhD, *Boston University*
Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Optics
Affiliation: Materials Science

Yishu Jiang, PhD, *Northwestern University*
Assistant Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Biochemistry and Biophysics

William D. Jones, PhD, *California Institute of Technology*
Professor
Charles Frederick Houghton Professor of Chemistry
Primary Appointment(s): Chemistry

C. Rose Kennedy Aggarwal, PhD, *Harvard University*
Assistant Professor
Primary Appointment(s): Chemistry

Kathryn Knowles, PhD, *Northwestern University*
Assistant Professor
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Todd D. Krauss, PhD, *Cornell*
Professor
Jay Last Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Optics
Affiliation: Materials Science

Ellen Matson, PhD, *Purdue University*
Professor
Director, Graduate Studies
Primary Appointment(s): Chemistry
Affiliation: Materials Science

David M. McCamant, PhD, *University of California, Berkeley*
Associate Professor
Associate Chair, Department of Chemistry
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Bradley L. Nilsson, PhD, *University of Wisconsin–Madison*
Professor
Director, Materials Science Program
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Benjamin E. Partridge, PhD, *University of Pennsylvania*
Assistant Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Chemical Engineering
Affiliation: Materials Science

Alexandra Paton, PhD, *New Mexico State University*
Assistant Professor
Primary Appointment(s): Chemistry

Michael Ruggiero, PhD, *Syracuse University*
Associate Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Chemical Engineering

Wolf-Udo Schröder, PhD, *Technical University of Darmstadt*
Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Physics

Agnes E. Thorarinsdottir, PhD, *Northwestern University*
Assistant Professor
Primary Appointment(s): Chemistry

Shauna Tschirhart, PhD, *University of Illinois Urbana– –Champaign*
Assistant Professor
Primary Appointment(s): Chemistry

Admissions

Applying to Doctoral Programs

PhD in Chemistry Application Requirements
If your native language is not English and you completed your secondary or higher education in a non-native English-speaking country, you must take the Duolingo English Test, TOEFL, or IELTS to demonstrate English language proficiency.

In your required Statement of Purpose, explain why you are applying to the University of Rochester for graduate study. Describe your research experiences as well as future research goals for your intended field of study. As part of this statement, applicants should indicate at least three faculty of interest as potential PhD advisors. Please supply detailed comments supporting these selections.

While completing the online application, you will be asked to provide the names and contact information for three people you are asking to recommend you for graduate school.

Academics

Doctoral Degrees and Requirements

Chemistry PhD students are required to take five courses determined by the student's interests and field of study and complete a total of 90 credits. Student must complete at least five courses, and earn the remaining credits through research. Students may choose from a variety of intermediate and advanced chemistry courses in all areas of chemistry with guidance of from advisor.

Students must pass a set of written qualifying examinations by April of their second year. By July 31 of the same year, students must pass an oral qualifying examination, which is based on their proposal for further PhD research.

During their third year of study, students present a departmental seminar on a research topic, as is customary in the student's subdiscipline.

By the end of the fourth year of study, students will meet with their PhD examination committee to discuss progress leading to a successful completion of the dissertation and promote timely completion of the PhD degree.

GRADUATE COURSE TITLES

CHEM 402. Biophysical Chemistry
CHEM 406. Interface of Chemistry and Biology
CHEM 409. Frontier Rsch Chem & Bio
CHEM 411. Inorganic Chemistry I
CHEM 415. Group Theory
CHEM 416. X-Ray Crystallography
CHEM 421. Basic Organometallic Chemistry
CHEM 422. Organometallic Chemistry
CHEM 423. NMR Spectroscopy
CHEM 424. Physical Methods in Inorganic Chemistry
CHEM 425. Physical Methods in Inorganic Chemistry
CHEM 427. Organic Structure Determination
CHEM 427. Organic Structure Determination
CHEM 428. Engineering of Soft Matter I
CHEM 434. Methods for Mechanistic Elucidation
CHEM 435. Organic Reactions

CHEM 436. Transition Metal Catalysis in Organic Synthesis I
CHEM 438. Organic Synthesis
CHEM 440. Bioorganic Chemistry
CHEM 441. Physical Chemistry I
CHEM 442. Physical Chemistry II
CHEM 444. The Advanced Nuclear Science Education Lab
CHEM 446. Nanoporous Materials Chemistry
CHEM 449. Advanced Topics in Spectroscopy
CHEM 451. Quantum Chemistry I
CHEM 452. Quantum Dynamics
CHEM 456. CHEM Bonds: From Molecules to Materials
CHEM 457. Foundational Concepts in Spectroscopy
CHEM 458. Spectroscopy and Kinetics
CHEM 459. Electrochemical Engineering Funding and Applications
CHEM 460. Chemical Kinetics
CHEM 461. Spectroscopy Techniques Applied to Biological Systems
CHEM 462. Biological Chemistry
CHEM 468. Computational Chemistry
CHEM 470. Computational Chemistry II
CHEM 472. Elements of Communication
CHEM 475. The Chemistry of Poisons
CHEM 476. Polymer Chemistry
CHEM 486. Energy Science Tech Soc
CHEM 487. Surface Analysis
CHEM 511. Chemistry Seminar
CHEM 518. Kinetics in Organometallic Reactions and Catalysis
CHEM 583. Advanced Chemistry Seminar and Colloquium
CHEM 585. First Year Graduate Workshop
CHEM 594. Internship
CHEM 595. PhD Research in Chemistry
CHEM 595A. PhD Research in Absentia
CHEM 595B. PhD Research in Absentia Abroad
CHEM 895. Continuation of Master's Enrollment
CHEM 897. Master's Dissertation
CHEM 995. Continuation of Doctoral Enrollment
CHEM 997. Doctoral Dissertation
CHEM 999. Doctoral Dissertation
CHEM 999A. Doctoral Dissertation in Absentia
CHEM 999B. Doctoral Dissertation in Absentia Abroad

Center for Visual Science

Susana Marcos
Co-Director

David Williams
Co-Director

The Center for Visual Science is an interdepartmental program that brings together vision scientists at the University of Rochester. We are united by a shared conviction that the visual system can be understood only by the coordinated effort of diverse scientists focusing on different parts of the problem.

Mission Statement and Strategic Goals

The expertise of CVS faculty spans psychophysical, optical, physiological, computational, anatomical, and clinical approaches to visual science. The role of the center is to integrate these approaches into a coordinated research effort. Over 40 participating investigators hold their primary appointments in one of eight departments: biomedical engineering, brain and cognitive sciences, computer science, the Flaum Eye Institute, neurology, neuroscience, the Institute of Optics, and psychiatry, plus the Chester F. Carlson Center for Imaging Science at Rochester Institute of Technology. We are primarily clustered in two main locations: the School of Medicine and Dentistry and Arts, Sciences, and Engineering. Vision research at Rochester falls within five major themes: Visual Perception, Cognition, and Action; Visual Development, Learning, and Plasticity; Multisensory and Sensorimotor Integration; Advanced Optical Technology, and Disorders of Vision.

https://www.cvs.rochester.edu/

Graduate Faculty Information

Mark Buckley, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Center for Visual Science, Center for Musculoskeletal Research
Affiliation: Materials Science

Gregory DeAngelis, PhD, *University of California, Berkeley*
Professor
George Eastman Professor
Primary Appointment(s): Brain and Cognitive Sciences, Neuroscience, Biomedical Engineering
Affiliation: Center for Visual Science

James Fienup, PhD, *Stanford University*
Professor
Robert E. Hopkins Professor of Optics; Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Electrical and Computer Engineering, Center for Visual Science, Laboratory for Laser Energetics

Manuel Gomez-Ramirez, PhD, *City University of New York Graduate Center*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences
Affiliation: Center for Visual Sciences

Ralf M. Haefner, PhD, *Oxford University*
Associate Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience
Affiliation: Center for Visual Science

Robert A. Jacobs, PhD, *University of Massachusetts*
Professor
Primary Appointment(s): Brain and Cognitive Sciences, Computer Science
Affiliation: Center for Visual Science

Christopher Kanan, PhD, *UC San Diego*
Associate Professor
Primary Appointment(s): Computer Science
Affiliation: Center for Visual Science

Wayne Knox, PhD, *University of Rochester*
Professor
Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy, Center for Visual Science, Materials Science, Laboratory for Laser Energetics
Affiliation: Materials Science

Susana Marcos, PhD, *University of Salamanca*
Professor
David R. Williams Director of the Center for Visual Science, Nicholas George Endowed Professor in Optics
Primary Appointment(s): Optics, Center for Visual Science

Jude Mitchell, PhD, *University of California, San Diego*
Associate Professor
Primary Appointment(s): Brain and Cognitive Sciences
Affiliation: Center for Visual Science

Martina Poletti, PhD, *Boston University*
Associate Professor
Primary Appointment(s): Brain and Cognitive Sciences
Affiliation: Center for Visual Science

Jannick Rolland, PhD, *University of Arizona*
Professor
Brian J. Thompson Professor of Optical Engineering
Primary Appointment(s): Optics
Joint Appointment(s): Biomedical Engineering, Center for Visual Science

Michele Rucci, PhD, *Scuola Superiore S.Anna*
Professor
Primary Appointment(s): Brain and Cognitive Sciences
Affiliation: Center for Visual Science

Adam Snyder, PhD, *City University of New York Graduate Center*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience
Affiliation: Center for Visual Science

Duje Tadin, PhD, *Vanderbilt University*
Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience, Ophthalmology
Affiliation: Center for Visual Science

David R. Williams, PhD, *University of California, San Diego*
Professor
William G. Allyn Professor of Medical Optics
Primary Appointment(s): Optics
Joint Appointment(s): Ophthalmology, Center for Visual Science, Biomedical Engineering, Brain and Cognitive Sciences

James M. Zavislan, PhD, *University of Rochester*
Professor
Primary Appointment(s): Optics
Joint Appointment(s): Biomedical Engineering, Ophthalmology, Center for Visual Science

Yuhao Zhu, PhD, *University of Texas at Austin*
Associate Professor
Primary Appointment(s): Computer Science
Joint Appointment(s): Center for Visual Science

Admissions

The Center for Visual Science does not offer degree programs.

Academics

The Center for Visual Science does not offer degree programs but offers graduate-level courses for students in other programs.

GRADUATE COURSE TITLES

CVSC 491. Master's Readings
CVSC 493. Master's Special Topics
CVSC 495. Master's Research
CVSC 504. Sensory Systems
CVSC 528. Special Topics in Vision
CVSC 534. Introduction to Augmented and Virtual Reality
CVSC 535. Selected Topics in Augmented and Virtual Reality
CVSC 572. Practicum in Augmented and Virtual Reality
CVCS 591. PhD Readings
CVSC 595. PhD Research

Earth and Environmental Sciences

John Kessler
Chair

Vasilii Petrenko
Director of Graduate Studies

The EES Department is an internationally recognized leader in geoscience research and offers programs of study leading to a PhD in geosciences and an MS in geological sciences. These programs provide comprehensive instruction in the geosciences through a wide range of courses, as well as extensive research experience and teaching experience to prepare students for successful careers in academia as well as in private and government sectors. The department faculty conduct research in paleomagnetism, seismology, geodynamics, planetary science, solid earth geochemistry, surface processes, climate and paleoclimate, atmospheric chemistry, chemical oceanography, and the carbon cycle. Graduate research includes exciting field, laboratory and computationally focused projects and is facilitated by state-of-the-art analytical instrumentation and computational facilities.

Mission Statement and Strategic Goals

EES' mission is to conduct scientific research and teaching of the highest order to better understand our planet, its climate, and other planetary bodies, and to prepare our students for success in an ever-changing world. The main goals of the graduate program specifically are to help our students develop into successful, independent, and productive researchers in their field of study, as well as effective geoscience educators.

http://www.sas.rochester.edu/ees/

Graduate Faculty Information

Erin Black, PhD, *Massachusetts Institute of Technology and Woods Hole Oceanographic Institution*
Assistant Professor
Primary Appointment(s): Earth and Environmental Sciences

Rachel Glade, PhD, *University of Colorado Boulder*
Assistant Professor
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Mechanical Engineering

John Kessler, PhD, *University of California, Irvine*
Professor
Chair, Earth and Environmental Sciences
Primary Appointment(s): Earth and Environmental Sciences

Lee Murray, PhD, *Harvard University*
Associate Professor
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Physics and Astronomy

Miki Nakajima, PhD, *California Institute of Technology*
Assistant Professor
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Physics and Astronomy

Tolulope Olugboji, PhD, *Yale University*
Assistant Professor
Primary Appointment(s): Earth and Environmental Sciences

Vasilii Petrenko, PhD, *Scripps Institution of Oceanography, University of California, San Diego*
Professor
Director, Graduate Studies
Primary Appointment(s): Earth and Environmental Studies

Kevin Righter, PhD, *University of California at Berkeley*
Professor
Primary Appointment(s): Earth and Environmental Sciences

John A. Tarduno, PhD, *Stanford University*
Professor
Dean of Research
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Physics and Astronomy

Dustin Trail, PhD, *Rensselaer Polytechnic Institute*
Associate Professor
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Staff Scientist, LLE

Thomas Weber, PhD, *University of California, Los Angeles*
Associate Professor
Primary Appointment(s): Earth and Environmental Sciences

Admissions

Applying to Doctoral Programs

Graduate students are expected to have a strong background in geoscience and broad knowledge of other sciences and mathematics. However, because of the interdisciplinary nature of research in the department, applications are also welcome from students with strong backgrounds in other areas such as chemistry, biology, physics, engineering, and materials science. Financial aid is available in the form of teaching and research assistantships and fellowships. We strongly encourage applications from underrepresented minorities.

Applications for admission should include transcripts of all undergraduate and graduate coursework done at other institutions, three letters of recommendation, and a personal statement. A sample of scientific writing and GRE scores are recommended but not required. TOEFL, IELTS or Duolingo English

proficiency exam scores are required for international students. This may be waived for students from countries whose native language is English or for students who have completed at least three years of full time and in-person postsecondary study in one of these countries.

Applying to Master's Programs

The department offers an MS program for highly qualified applicants. Students applying from within the University of Rochester who wish to complete this program in one year should consult with their advisor and start this program early, taking some graduate-level courses in their junior and seniors years in order to fulfill all requirements in a timely manner.

Applications for admission should include transcripts of all undergraduate and graduate coursework done at other institutions, three letters of recommendation, and a personal statement. A sample of scientific writing and GRE scores are recommended but not required. TOEFL, IELTS or Duolingo English proficiency exam scores are required for international students. This may be waived for students from countries whose native language is English or for students who have completed at least three years of full time and in-person postsecondary study in one of these countries.

Academics

Master's Degrees and Requirements

The department has a Master of Science in Geosciences program, which emphasizes involvement in research projects. Typically, students joining the MS program from outside of EES complete coursework during the first year and undertake their MS research and thesis in their second year. Undergraduate students already a part of EES who apply for the MS program typically continue their senior thesis research with their academic advisor. Graduate courses taken during the third and fourth year that are not required for the undergraduate degree program may be applied toward the master's degree. To satisfy the requirements for the MS, students need to complete 30 credit hours of relevant graduate work; at least 18 must be in formal graduate courses. Students must also complete either a master's thesis or an essay and pass an oral examination.

Doctoral Degrees and Requirements

Students in the PhD in Geosciences program at the University of Rochester are expected to spend three to five semesters in intensive coursework (both within the department and in other departments) before taking their qualifying examinations. They are encouraged to start research as early as possible and are expected to spend all their time on research after having passed the qualifying exams. The curriculum is designed to ensure that students not only gain background in their own specialty but also become familiar with concepts in other aspects of earth sciences. Students can also complete a specialty outside of the department.

To satisfy requirements for the PhD, students must complete 90 credit hours of relevant graduate work; approximately 36 should be from formal courses. The students must pass a qualifying examination in their fifth semester, and complete and defend an original research thesis that contains sufficient material for approximately three peer-reviewed scientific publications. Students are also required to serve as teaching assistants for at least one semester.

GRADUATE COURSE TITLES

EESC 404. Earth Materials
EESC 405. Solid Earth Geophysics
EESC 406. Petrology
EESC 407. Advanced Seminar in Climate and Environmental Change
EESC 412. Climate Change Perspectives in Chemical Oceanography
EESC 414. Earth Science Data Analysis
EESC 415. Seismology and Earth Structure
EESC 416. Environmental Geochemistry
EESC 418. Atmospheric Geochemistry
EESC 420. Introduction to Geobiology
EESC 423. Earth Surface Processes: The Science of Scenery
EESC 424. Geomechanics
EESC 425. Seismic Signals and Noise
EESC 430. Principles of Geochronometry
EESC 432. Current Topics in Biogeochemistry
EESC 433. Marine Ecosystems and Carbon Cycle Modeling
EESC 434. Fundamentals of Atmospheric Modeling
EESC 435. Physical Oceanography
EESC 436. Physics of Climate
EESC 453. Geodynamics
EESC 454. Physics of Planetary Interiors
EESC 455. Planetary Science
EESC 456. Paleomagnetism and Global Plate Tectonics
EESC 461. Stable Isotope Geochemistry
EESC 462. Radioisotope Geochemistry
EESC 463. Intro to Thermodynamics
EESC 464. Experimental Radioisotope Geochemistry
EESC 465. Paleoclimate
EESC 466. Ice Core Records of Climate and Environmental Change
EESC 468. Principles of Experimental Geochemistry
EESC 474. Paleoceanography and Climate Change

Economics

Paulo Barelli
Chair

Yan Bai
Associate Chair

John Singleton
Director of Graduate Studies

The Department of Economics offers a graduate education that focuses on developing students' analytical and research capabilities. The blend of coursework, active seminars, research workshops, and informal faculty-student interactions has met with substantial historical success, demonstrated by the professional achievements of the program's graduates and, more formally, by placement in the top 10 graduate programs, according to the rankings of effectiveness published by the National Academy of Sciences.

https://www.sas.rochester.edu/eco/

Graduate Faculty Information

George Alessandria, PhD, *University of Pennsylvania*
Professor
Primary Appointment(s): Economics

Elizabeth Ashby, PhD, *Syracuse University*
Associate Professor
Primary Appointment(s): Economics

Yu Awaya, PhD, *Pennsylvania State*
Associate Professor
Primary Appointment(s): Economics

Sadhika Bagga,
Assistant Professor
Primary Appointment(s): Economics

Yan Bai, PhD, *University of Minnesota*
Professor
Primary Appointment(s): Economics

Paulo Barelli, PhD, *Columbia University*
Associate Professor
Chair, Department of Economics
Primary Appointment(s): Economics
Affiliation: Wallis Institute

Travis Baseler, PhD, *Stanford University*
Assistant Professor
Primary Appointment(s): Economics

Mark Bils, PhD, *Massachusetts Institute of Technology*
Professor
Hazel Fyle Professor of Economics
Primary Appointment(s): Economics

Gaston Chaumont, PhD, *Pennsylvania State*
Assistant Professor
Primary Appointment(s): Economics

Bin Chen, PhD, *Cornell University*
Associate Professor
Associate Chair, Department of Economics
Primary Appointment(s): Economics

Angela Crema, PhD, *New York University*
Assistant Professor
Primary Appointment(s): Economics

Srihari Govindan, PhD, *State University of New York at Stony Brook*
Professor
Lionel W. McKenzie Professor of Economics
Primary Appointment(s): Economics

Rafael Guntin Wernik, PhD, *New York University*
Assistant Professor
Primary Appointment(s): Economics

Lisa Kahn, PhD, *Harvard University*
Professor
Helen F. and Fred H. Gowen Professor in the Social Sciences
Primary Appointment(s): Economics

Asen Kochov, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Economics
Affiliation: Wallis Institute

Steven Landsburg, PhD, *University of Chicago*
Professor
Primary Appointment(s): Economics

Yukun Ma, PhD, *Vanderbilt University*
Assistant Professor
Primary Appointment(s): Economics
Joint Appointment(s): Data Science

Mattias Moretti,
Assistant Professor
Primary Appointment(s): Economics

Ronni Pavan, PhD, *University of Chicago*
Professor
Primary Appointment(s): Economics

Fernando Parro, PhD, *University of Chicago*
Professor
Primary Appointment(s): Economics

John Singleton, PhD, *Duke University*
Associate Professor
Director, Graduate Studies
Primary Appointment(s): Economics

Christopher Sleet, PhD, *Stanford University*
Professor
Primary Appointment(s): Economics

Kegon Tan, PhD, *University of Wisconsin–Madison*
Assistant Professor
Primary Appointment(s): Economics

William Thomson, PhD, *Stanford University*
Professor
Elmer B. Milliman Distinguished Professor in Economics
Primary Appointment(s): Economics

Iris Vrioni, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Economics

Michael Wolkoff, PhD, *University of Michigan*
Professor
Primary Appointment(s): Economics

Nese Yildiz, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Economics

Admissions

Applying to Doctoral Programs

Applications to the PhD in Economics program comprise the following:

- Online application
- Application fee
- Transcripts
- GRE general test (required)
- TOEFL or TOEFL iBT Home Edition (if applicable)
- Three letters of recommendation
- Personal statement (no word limit, but at least a page long)

Proficiency in both oral and written English is required.

Academics

Doctoral Degrees and Requirements

The department's doctoral program requires at least three years of full-time study. The first two years are principally spent in required coursework, with students typically undertaking two to four additional years of on-campus dissertation research. This PhD training builds upon the opportunities for close working relationships between students and faculty that are possible within a small, integrated program. The aspect of the program is especially important during the thesis-writing phase, when students confront the frontiers of economic knowledge.

Each student then develops a field of specialization. Available fields are applied economics, econometrics, international economics, macroeconomics, and microeconomic theory. The student's preparation is evaluated by a qualifying examination in each field of specialization. A distribution requirement, satisfied by taking a graduate course in two fields other than the fields of specialization, ensures breadth of knowledge.

All PhD candidates are required to do some supervised teaching as part of the degree requirements. Students do not teach in the first two years and are required to work as teaching assistants only in years three and four. Students can opt to also work as teaching assistants in years five and six. Advanced students sometimes have the opportunity to teach a course of their own.

GRADUATE COURSE TITLES

ECON 471. Modern Value Theory I
ECON 472. Modern Value Theory
ECON 475. Macroeconomics
ECON 476. Macroeconomics II
ECON 481. Introduction to Math Economics
ECON 482. Math Economics
ECON 483. Introduction to Math Statistics
ECON 484. Mathematical Statistics and Econometrics
ECON 485. Introduction to Econometrics I
ECON 486. Introduction to Econometrics II
ECON 487. Applied Econometrics
ECON 491. Master's Readings in Economics
ECON 492. Mathematical Economics III
ECON 493. Master's Essay
ECON 501. Seminar in Labor Economics
ECON 502. Discrete Choice Models
ECON 503. Labor Economics II
ECON 504. Topics in Applied Economics
ECON 507. Economic Theory Workshop
ECON 508. Theory Workshop II
ECON 511. International Trade I
ECON 512. International Trade II
ECON 513. International Economics I
ECON 521. Advanced Economic Theory I
ECON 524. Game Theory and Economic Mechanisms
ECON 526. Seminar in Game Theory and Economic Mechanisms II
ECON 530. Advanced Topics in Monetary and Financial Economics
ECON 531. Macroeconomic Workshop
ECON 532. Macroeconomics Workshop II
ECON 534. Topics in Macroeconomics I
ECON 535. Topics in Macroeconomics II
ECON 536. Topics in Macroeconomics III
ECON 541. Topics in Microeconometrics I
ECON 542. Topics in Microeconometrics II
ECON 543. Topics in Macroeconometrics I
ECON 544. Topics in Macroeconometrics II
ECON 547. Econometrics Workshop

ECON 548. Econometrics Workshop II
ECON 551. Applied Economics Workshop
ECON 552. Applied Workshop II
ECON 571. Readings in Macroeconomics
ECON 572. Theory Reading Group II
ECON 573. Readings Applied Economics
ECON 578. Readings in International Economics
ECON 588. Professional Economic Communication
ECON 591. PhD Readings in Economics
ECON 594. Research Internship
ECON 595. PhD Research in Economics
ECON 595A. PhD Research in Absentia
ECON 895. Continuation of Master's Enrollment
ECON 897. Master's Dissertation
ECON 899. Master's Dissertation
ECON 985. Leave of Absence
ECON 986V. Full-Time Visiting Student
ECON 990. Summer in Residence
ECON 995. Continuation of Doctoral Enrollment
ECON 997. Doctoral Dissertation
ECON 997A. Doctoral Dissertation in Absentia
ECON 999. Doctoral Dissertation
ECON 999A. Doctoral Dissertation in Absentia
ECON 999B. PhD in Absentia Abroad

English

Katherine Mannheimer
Chair

William Miller
Director of Graduate Studies

The Department of English is devoted to the study of literature, media, and creative arts. We offer courses in all periods and genres of English, American, and Anglophone literature—poetry, fiction, nonfiction, and drama—as well as a wide array of classes in creative writing, film, media studies, journalism, rhetoric, and theater. The department joins critics, scholars, and artists in an environment that fosters interactive learning and teaching, with extensive opportunities to pursue internships and independent research.

Mission Statement and Strategic Goals

The Department of English offers programs of study leading to the PhD and MA degrees. The program leading to the doctorate emphasizes the critical and scholarly study of English and American literature, as well as cultural studies, critical theory, film, and media studies. It is also concerned with developing the candidate's ability as a classroom teacher. Candidates may enter the doctoral program directly from their undergraduate work or after completion of an MA.

https://www.sas.rochester.edu/eng/

Graduate Faculty Information

David Bleich, PhD, *New York University*
Professor
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute

Joel Burges, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Film and Media Studies

Kenneth Gross, PhD, *Yale University*
Professor
Alan F. Hilfker Distinguished Professor of English
Primary Appointment(s): English

Jennifer Grotz, PhD, *University of Houston*
Professor
Arthur Satz Professor of the Humanities
Primary Appointment(s): English
Affiliation: Literary Translation Studies

Gregory Heyworth, PhD, *Princeton University*
Associate Professor
Director, Lazarus Project
Primary Appointment(s): English

Sarah Higley, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Rosemary Kegl, PhD, *Cornell University*
Associate Professor of English
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute

Bette London, *University of California, Berkeley*
Professor
Primary Appointment(s): English
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Katherine Mannheimer, PhD, *Yale University*
Professor
Chair, Department of English
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute

Jeffrey Q. McCune Jr. , PhD, *Northwestern University*
Associate Professor
Frederick Douglass Professor; Director, Chair, Department of Black Studies, Frederick Douglass Institute for African American Studies
Primary Appointment(s): English, Frederick Douglass Institute

John Michael, PhD, *Johns Hopkins University*
Professor
John Hall Deane Professor of Rhetoric and Poetry; Director, American Studies
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Frederick Douglass Institute, Literary Translation Studies, Susan B. Anthony Institute

Jason Middleton, PhD, *Duke University*
Associate Professor
Director, Film and Media Studies Program
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Film and Media Studies

William Miller, PhD, *Johns Hopkins University*
Associate Professor
Primary Appointment(s): English

Matthew Omelsky, PhD, *Duke University*
Associate Professor
Primary Appointment(s): English
Affiliation: Frederick Douglass Institute, Film and Media Studies

Supritha Rajan, PhD, *University of North Carolina at Chapel Hill*
Associate Professor
Primary Appointment(s): English

James Rosenow, PhD, *University of Chicago*
Assistant Professor
Primary Appointment(s): English
Affiliation: Film and Media Studies

Steven Rozenski, PhD, *Harvard University*
Associate Professor
Primary Appointment(s): English
Affiliation: Literary Translation Studies

Stephen Schottenfeld, MFA, *University of Iowa*
Professor
Primary Appointment(s): English
Affiliation: Literary Translation Studies

Joanna Scott, MA, *Brown University*
Professor
Roswell Smith Burrows Professor of English; Director, Literary Arts Programs
Primary Appointment(s): English
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Jeffrey Allen Tucker, PhD, *Princeton University*
Associate Professor
Director of Undergraduate Studies (English and AAAS)
Primary Appointment(s): English
Affiliation: Frederick Douglass Institute

Admissions

Applying to Doctoral Programs

While most applicants to the PhD program have a BA or MA in English, we also welcome qualified students who studied in other related disciplines and show clear promise for success in English.

Application materials include:

- Personal statement
- Writing sample
- Two or three letters of recommendation, preferably from English faculty
- GRE scores (optional)
- Online application
- Application fee

Applying to Master's Programs

Applicants to the MA program should have strong undergraduate records in English or a related field.

Application materials include:

- Personal statement
- Writing sample
- Two or three letters of recommendation, preferably from English faculty
- GRE scores (optional)
- Online application
- Application fee

Academics

Master's Degrees and Requirements

The MA program is designed to be completed within one calendar year. The program requires at least 30 credit hours. Students must take at least six four-credit courses at either the 400 or 500 level. They also complete a capstone project: either an exam or an essay, which may be scholarly or creative.

Doctoral Degrees and Requirements

The PhD requires at least 90 credit hours of graduate coursework. While the program is flexible to meet students' needs, most students will take 10 four-credit courses in English. Other requirements include English Graduate Colloquium, a language exam, a departmental teaching apprenticeship and writing pedagogy courses, a qualifying exam, a completed dissertation prospectus, and defense of a completed dissertation.

GRADUATE COURSE TITLES

ENGL 400. History of the English Language
ENGL 401. Old English
ENGL 404. Chaucer
ENGL 405. Dante's Divine Comedy
ENGL 406. Topics in Medieval Literature
ENGL 407. Renaissance Writing and Its Audiences
ENGL 408. Renaissance Drama
ENGL 409. Doctors and Devils: Literature and Medicine in Early Modernity
ENGL 410. Shakespeare
ENGL 411. Milton
ENGL 413. Revenge Tragedies in the English Renaissance
ENGL 415. Early English Novel
ENGL 416. Lost and Found: A History for the Search for Lost Texts, 1345–2020
ENGL 420. Romantic Literature
ENGL 421. Victorian Literature
ENGL 422. 19th-Century British Novel
ENGL 423. Madness, Marriage, and Monstrosity
ENGL 425. American Renaissance
ENGL 426. American Realism: Sex, Race, Empire
ENGL 428. African American Drama
ENGL 429. Ideas of America
ENGL 430. African American Autobiography
ENGL 431. 20th Century British Novel
ENGL 432. Queer Thought, Queer Insurgencies
ENGL 433. Modern Poetry
ENGL 434. Modern Fiction
ENGL 435. 20th Century Drama
ENGL 436. Nobel Prize Literature
ENGL 436A. Postmodernism: Fiction, Philosophy, Media
ENGL 438. Making Modernism New Again
ENGL 440. Language in Science and Religion
ENGL 443. The Brontes
ENGL 445. The Outsider in Literature
ENGL 447. Science Fiction
ENGL 449. Gender and Anger
ENGL 452. Theater in England
ENGL 455. Film History: Early Cinema
ENGL 456. Film History: 1929–1959
ENGL 457. Film History: 1959–1989
ENGL 458. Film as Object
ENGL 459. Atomic Creatures: Godzilla
ENGL 461. Classical Film Theory
ENGL 462. American Experiments: Film and Art of the 1930s
ENGL 463. The Matter with Men in Film and Society
ENGL 465. Race and Gender in Popular Film
ENGL 468. Digital Imaging
ENGL 469. Museum Practice
ENGL 470. Curatorial Theory and Practice
ENGL 471. Film Conservation and Restoration
ENGL 472. Moving Image Archive Management
ENGL 473. Laboratory Work
ENGL 474. Personal Project
ENGL 475. Advanced Creative Writing: Fiction
ENGL 476. Advanced Creative Writing: Poetry
ENGL 480. Research Seminars
ENGL 484. Orality, Language, and Literacy
ENGL 487. Studies in Translation
ENGL 491. Master's Reading Course
ENGL 495. Master's Research
ENGL 500. Graduate Colloquium
ENGL 504. Forest and City: Enclosing "Nature" in Medieval Literature
ENGL 507. Writing the Fairy
ENGL 510. Shakespeare: Last Plays
ENGL 511. Literature and Violence
ENGL 538. 19th-Century American Literature in a Global Age: Practice and Theory
ENGL 540. Modernisms, Old and New
ENGL 555. Theorizing Horror
ENGL 571. Writing Pedagogy
ENGL 580. Pedagogical Training
ENGL 595. PhD Research
ENGL 895. Continuation of Master's Enrollment
ENGL 897. Master's Dissertation
ENGL 995. Continuation of Doctoral Enrollment
ENGL 997. Doctoral Dissertation
ENGL 999. Doctoral Dissertation

Film and Media Studies

Joel Burges
Program Director

Richard Gollin, Professor Emeritus of English, founded the film studies program at the University in 1976 with the assistance of a grant from the National Endowment for the Humanities. He headed the program until his retirement in 1989. The author of A *Viewer's Guide to Film: Art, Artifices, and Issues*, Gollin also received recognition for his research and writings on Romantic poetry and the Victorian novel. While the program primarily serves undergraduates, the Film and Media Studies program does offer graduate courses.

https://www.sas.rochester.edu/fms/

Graduate Faculty Information

Cary Adams, MFA, *Syracuse University*
Associate Professor
Primary Appointment(s): Art and Art History
Affiliation: Film and Media Studies

Joanne Bernardi, PhD, *Columbia University*
Professor
Head, Japanese Program
Primary Appointment(s): Modern Languages and Cultures
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

William H. Bridges IV, PhD, *Princeton University*
Associate Professor
Arthur Satz Professor of the Humanities
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Frederick Douglass Institute, Film and Media Studies

Joel Burges, PhD, *Stanford University*
Associate Professor
Director, Film and Media Studies Program
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Film and Media Studies

Sarah Higley, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute, Film and Media Studies

June J. Hwang, PhD, *University of California, Berkeley*
Associate Professor
Director, Susan B. Anthony Institute for Gender, Sexuality, and Women's Studies
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Evelyne Leblanc-Roberge, MFA, *Alfred University*
Associate Professor
Primary Appointment(s): Art and Art History
Affiliation: Film and Media Studies

Jason Middleton, PhD, *Duke University*
Associate Professor
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Film and Media Studies

Matthew Omelsky, PhD, *Duke University*
Associate Professor
Director of Undergraduate Studies, Department of Black Studies
Primary Appointment(s): English
Affiliation: Frederick Douglass Institute, Film and Media Studies

Raúl Rodríguez-Hernández, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Susan B. Anthony Institute, Film and Media Studies

James Rosenow, PhD, *University of Chicago*
Assistant Professor
Primary Appointment(s): English
Affiliation: Film and Media Studies

Claudia Schaefer, PhD, *Washington University in St. Louis*
Professor
Rush Rhees Chair
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Reinhild Steingröver, PhD, *University at Buffalo*
Professor
Director, Faculty Development (ESM)
Primary Appointment(s): Humanities (ESM)
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Allen Topolski, MFA, *Pennsylvania State University*
Associate Professor
Chair, Art and Art History
Primary Appointment(s): Art and Art History
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Sharon Willis, PhD, *Cornell University*
Professor
Fanny Knapp Allen Professor of Fine Arts
Primary Appointment(s): Art and Art History
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Frederick Douglass Institute, Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Admissions

The Film and Media Studies Program does not offer graduate programs. However, it does offer graduate courses for students enrolled in University graduate programs.

Academics

The Film and Media Studies Program offers the following graduate courses for students enrolled in University graduate programs.

GRADUATE COURSE TITLES

FMST 407. Hayao Miyazaki and Planet Ghibli
FMST 413. Race and Gender in Popular Film
FMST 448. Film History: 1929–1959
FMST 471. Straightjacket Society: Juzo Itami's Cinema
FMST 473. Director Studies: Akira Kurosawa
FMST 499. Atomic Creatures: Godzilla
FMST 556. Classical Film Theory
FMST 557. French Cinema: The New Wave

Frederick Douglass Institute and Department of Black Studies

Jeffrey Q. McCune Jr.
Chair

The Frederick Douglass Institute and Department of Black Studies, originally named the Frederick Douglass Institute of African and African American Studies, was established in 1986 to promote the development of Black studies in undergraduate and graduate education and to advance research at Rochester. The program transitioned into a department in October 2022.

https://www.sas.rochester.edu/aas/index.html

Graduate Faculty Information

Stefanie Dunning, PhD, *University of California, Riverside*
Professor
Susan B. Anthony Professor
Primary Appointment(s): Black Studies, Susan B. Anthony Institute/Sexuality, Women, and Gender Studies
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Jordan Ealey, PhD, *University of Maryland, College Park*
Assistant Professor
Primary Appointment(s): Black Studies
Affiliation: Frederick Douglass Institute

Jordache A. Ellapen, PhD, *Indiana University*
Associate Professor
Primary Appointment(s): Black Studies
Affiliation: Frederick Douglass Institute

Karma Frierson, PhD, *University of Chicago*
Assistant Professor
Primary Appointment(s): Black Studies
Affiliation: Frederick Douglass Institute

Cilas Kemedjio, PhD, *The Ohio State University*
Professor
Primary Appointment(s): Black Studies, Francophone and French Studies
Affiliation: Frederick Douglass Institute

Jeffrey Q. McCune Jr., PhD, *Northwestern University*
Associate Professor
Frederick Douglass Professor; Chair, Department of Black Studies
Primary Appointment(s): English, Black Studies, Frederick Douglass Institute
Affiliation: Visual Cultural Studies Program

Philip V. McHarris, PhD, *Yale University*
Assistant Professor
Primary Appointment(s): Black Studies
Affiliation: Frederick Douglass Institute

Matthew Omelsky, PhD, *Duke University*
Associate Professor
Director of Undergraduate Studies, Department of Black Studies
Primary Appointment(s): English, Black Studies, Visual and Culture Studies
Affiliation: Frederick Douglass Institute, Black Studies, Film and Media Studies

Admissions

The Department of Black Studies does not offer graduate programs. However, it does offer a graduate certificate for which university students can apply.

Academics

The Department of Black Studies offers the following graduate courses for students enrolled in University graduate programs.

GRADUATE COURSE TITLES

BLST 412. Humanitarianism and Social Insecurities
BLST 424. Black Geographies: Race, Space, and Abolition
BLST 427. Singin' a Black Girl's Song: Black Women's Sonic Cultures
BLST 444. Mutilated Bodies: From Traditions to Cutting-Edge Technologies
BLST 447. Biographies of Emancipation in the Black World
BLST 501. Photographing Black Lives
BLST 545. Black Sexual Worlds
BLST 580. Black Feminist Theory & Criticism

History

Ruben Flores
Chair

Brianna Theobald
Director of Graduate Studies

Overview

The Department of History offers programs of study leading to the degrees of doctor of philosophy and master of arts. The faculty intends graduate training to be intellectually stimulating and supportive of a wide variety of careers in and outside higher education. We support our graduate students' efforts to shape their programs of study to fit the ambitions they hold, and encourage applicants who are open to a wide variety of careers. These include tenure-track academic faculty appointments, teaching at the primary and secondary-school levels, grant writing, public history, digital humanities, and documentary editing and film-making. History graduate students also go on to careers in federal, state, and local politics and government; the foreign service; journalism; archival administration; archaeology; extension education and lifelong learning; community-engaged teaching; business and corporate management; law; medicine and hospital administration; public health and medical humanities; and museum work of various kinds.

Mission Statement and Strategic Goals

In many careers and in life, a historical perspective is essential, yet often missing or under-developed. The problems we face as a nation and a species are better addressed with an understanding of the present and future as products of various pasts. Therefore, graduate training in the Department of History supports students' efforts to advance this understanding through programs tailored to their personal goals, under the direction of and in collaboration with leading scholars in their respective fields.

https://www.sas.rochester.edu/his/

Graduate Faculty Information

Tanya Bakhmetyeva, PhD, *University of Rochester*
Associate Professor
Associate Academic Director, Susan B. Anthony Institute for Gender, Sexuality, and Women's Studies
Primary Appointment(s): Susan B. Anthony Institute, History
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Molly Ball , PhD, *University of California, Los Angeles*
Assistant Professor
Latin American, Caribbean, and Latinx Studies Coordinator
Primary Appointment(s): History
Affiliation: Frederick Douglass Institute

Melanie Chambliss, PhD, *Yale University*
Assistant Professor
Primary Appointment(s): History

Thomas C. Devaney, PhD, *Brown University*
Associate Professor of History
Senior Associate Dean, School of Arts & Sciences
Primary Appointment(s): History
Affiliation: Susan B. Anthony Institute

Thomas Fleischman, PhD, *New York University*
Associate Professor of History
Director, Undergraduate Studies
Primary Appointment(s): History

Ruben Flores, PhD, *University of California, Berkeley*
Associate Professor of History
Department Chair, History
Primary Appointment(s): History

Gerald Gamm, PhD, *Harvard University*
Professor of History, Professor of Political Science
Primary Appointment(s): Political Science
Joint Appointment(s): History
Affiliation: Susan B. Anthony Institute

Michael J. Jarvis, PhD, *College of William and Mary*
Associate Professor of History
Director, Digital Elmina Project; Director, The Smith's Island Archaeology Project
Primary Appointment(s): History

Jed Kuhn, PhD, *Indiana University*
Assistant Professor of History
Primary Appointment(s): History

Matthew E. Lenoe, PhD, *University of Chicago*
Professor of History
Graduate Career Advisor, History
Primary Appointment(s): History

Jean Pedersen, PhD, *University of Chicago*
Professor of History, Professor of Humanities, Eastman School of Music
Primary Appointment(s): Humanities (ESM)
Joint Appointment(s): History
Affiliation: Susan B. Anthony Institute

Mical Raz, PhD/MD, *Tel Aviv University*
Professor
Charles E. and Dale L. Phelps Professor in Public Health and Policy
Primary Appointment(s): History
Joint Appointment(s): Medicine (SMD)

Pablo M. Sierra Silva, PhD, *University of California, Los Angeles*
Associate Professor of History
Primary Appointment(s): History
Affiliation: Susan B. Anthony Institute

Laura Ackerman Smoller, PhD, *Harvard University*
Professor of History
Arthur R. Miller Professor of History
Primary Appointment(s): History

Brianna Theobald, PhD, *Arizona State University*
Associate Professor of History
Director, Graduate Studies
Primary Appointment(s): History

Stewart A. Weaver, PhD, *Stanford University*
Professor of History
Franklin W. And Gladys I. Clark Professor of History
Primary Appointment(s): History

Tess Wingard, PhD, *University of York*
Assistant Professor of History
Primary Appointment(s): History

Admissions

Applying to Doctoral Programs

We welcome applicants with professional ambitions both within and beyond the academy, as well as those with interdisciplinary interests. Most applicants have the equivalent of an undergraduate degree and/or an MA in history, but the department welcomes qualified students who previously had specialized in other related disciplines and show clear promise of excellent work in history. We encourage applications from those with diverse backgrounds and from underrepresented groups.

Applications for admission should include transcripts of all undergraduate and graduate coursework done at other institutions, three letters of recommendation (preferably from history faculty), a statement of purpose that indicates the faculty member(s) with whom you would like to work, and a writing sample from a history course or BA or MA thesis. TOEFL, IELTS or Duolingo English proficiency exam scores are required for international students; this may be waived for students from certain countries whose native language is English or for students who have completed at least three years of full time and in-person postsecondary study in one of these countries.

Applying to Master's Programs

We welcome applicants with professional ambitions both within and beyond the academy, as well as those with interdisciplinary interests. Most applicants have the equivalent of an undergraduate degree, but the department welcomes qualified students who previously had specialized in other related disciplines and show clear promise of excellent work in history. We encourage applications from those with diverse backgrounds and from under-represented groups.

Applications for admission should include transcripts of all undergraduate and graduate coursework done at other

institutions, three letters of recommendation (preferably from history faculty), a statement of purpose that indicates the faculty member(s) with whom you would like to work, and a writing sample from a history course or BA or MA thesis. TOEFL, IELTS or Duolingo English Proficiency exam scores are required for international students; this may be waived for students from certain countries whose native language is English or for students who have completed at least three years of full time and in-person postsecondary study in one of these countries.

Academics

Master's Degrees and Requirements

The MA degree requires 30 hours of graduate credit beyond the bachelor's degree. Courses in the Department of History normally carry five credit hours. Full-time MA students earn 15 credits each semester for one year, for a total of 30 credit hours. The department offers two tracks to an MA degree: Plan A and Plan B. Students who wish to write a master's thesis complete Plan A; most students choose to complete Plan B, which requires a master's essay. Please see the MA handbook for specific coursework expectations for each plan.

Doctoral Degrees and Requirements

The PhD degree requires 90 hours of graduate credit beyond the bachelor's degree. Courses in the department normally carry five credit hours. Full-time PhD students earn 15 credits each semester for two years, for a total of 60 credit hours. They accrue an additional 30 credit hours by registering in the third year for HIST 502 The Dissertation Writers' Workshop and reading and research courses in connection with the dissertation. Students entering the program from another graduate program may receive transfer credit for up to two semesters of coursework for the PhD. The decision on transferable credits will be made by the Director of Graduate Studies and graduate studies committee on a case-by-case basis.

During their first three years in the program, students undertake both written and oral examinations in three geographic, thematic, or methodological research fields that should support their dissertation work. Students must successfully complete language exams when one or more foreign languages are central to their fields of study. Typically, PhD candidates serve as teaching assistants during their third year and are instructor of record for an independent course in their fourth or fifth year. Alternatively, students may choose to undertake a digital history or public history project or internship in lieu of serving as a TA or teaching their own course.

GRADUATE COURSE TITLES

HIST 400. History of Nature
HIST 401. Modernity and Modernism: Topics Course
HIST 402. Spatial History: Putting History in its Place
HIST 403. International Human Rights
HIST 404. Readings in Atlantic History
HIST 405. Maritime Atlantic History
HIST 406. Evolution of the Current World Economic Order from 1500
HIST 409. The Mediterranean World, 1400–1800
HIST 410. The Political Economy of Food in Africa
HIST 411. The Atlantic Slave Trade and Africa, 1650–1851
HIST 412. Global Crime and Detection
HIST 413. History of Global Exploration
HIST 420. Topics in Medieval European History
HIST 421. Topics in Early Modern European History
HIST 422. Miracles: From Antiquity to Modernity
HIST 423. World War II: Eastern Front
HIST 424. History of Emotions
HIST 425. Microhistory
HIST 426. History of Adventure
HIST 427. Real Existing Socialism: 19th and 20th Century Europe
HIST 428. Victorian England: Portrait of an Age, 1837–1901
HIST 429. History of Friendship
HIST 430. British Imperialism
HIST 431. Europe in 1215
HIST 432. Stalinism
HIST 433. Russia in East Asia
HIST 434. The Soviet Union and the Cold War
HIST 437. George Orwell and the 20th Century
HIST 440. Public History: Theory and Practice
HIST 442. Rich China, Poor China
HIST 443. Topics: Modern South Asia
HIST 444. China in Africa: The Socialist and Capitalist Stories
HIST 446. East Asia and the Cold War
HIST 450. Captives: Past, Present, and Future (1500–2100)
HIST 451. Life in the City: Latin American Urban History
HIST 452. Racial Democracies: Mexico vs. Brazil
HIST 453. Immigration and the Americas
HIST 454. Oral History Theory and Methods
HIST 455. Digital Paleography: Deciphering Early Modern Spanish (2cr)
HIST 456. American Intellectual History: Modernism to Civil Rights
HIST 457. America and the Holocaust
HIST 458. Archaeology Field and Research Methods
HIST 459. Birth in the Nation: Reproduction in the United States
HIST 460. America and the World to 1865
HIST 461. America and the World since 1865
HIST 462. American Thought: Topics Course
HIST 463. American Culture in the Great Depression and World War II
HIST 464. The Black Family in Slavery and Freedom
HIST 465. Topics in Early American History
HIST 466. 18th Century Anglo-America
HIST 467. Topics in Revolutionary America
HIST 469. Global America, 1865–Present
HIST 470. Histories of Race and Revolt in US Literature and Film
HIST 471. Digital Hands-On History
HIST 472. Topics in 20th Century US History
HIST 473. American Health Politics and Policies
HIST 474. Pandemics, Politics, and Policies in the US 1918–2020
HIST 475. Benjamin Franklin's America
HIST 476. Economy and Society in Classical Antiquity

HIST 477. Emergence of the Modern Congress
HIST 480. The Visual Culture of Heritage and Identity
HIST 482. Apocalypse Now…and Then: A History of Apocalyptic Thought
HIST 483. Disease and Society from Antiquity to the Present
HIST 484. Race, History, and Urban Politics
HIST 485. Digital History: Building a Virtual St. George's
HIST 486. The Other Atlantic: Ethnohistory, Chronicle, and Memory
HIST 487. Black Mexico
HIST 488. Doctors and Devils: Literature and Medicine in Early Modernity
HIST 489. The Role of the State in Global Historical Perspective
HIST 491. Master's Reading Course
HIST 495. Master's Research
HIST 496. Extended Reading at the Master's Level
HIST 497. Archaeology of Early America
HIST 500. Problems in Historical Analysis
HIST 502. Dissertation Prospectus Seminar

Linguistics

Scott Grimm
Chair

Maya Abtahian
Director of Graduate Studies

Overview

Linguistics at Rochester is grounded in the traditional fields of formal linguistics. Faculty employ theoretical and empirical methodologies to examine data and topics in syntax, semantics, pragmatics, phonetics, laboratory phonology, and morphology in collaboration with faculty and students in allied fields. Our work incorporates contemporary issues and practices in these areas. Our graduate programs are designed to integrate students into state-of-the-art linguistic research during the course of their program.

At Rochester, cross-disciplinary, collaborative work is particularly encouraged. In past years, our main allied fields have been in computer science and the cognitive sciences, with strong connections in related departments, such as Biomedical Engineering, Philosophy, and departments at the Eastman School of Music. We are also a core member of Rochester's Center for Language Sciences (CLS), which provides research, training, and collaboration opportunities for students and faculty involved in language research. Each of the graduate programs—PhD in Linguistics, MA in Linguistics, MA in Language Documentation and Description, and MS in Computational Linguistics—is designed to maximize the possibilities of this collaborative environment.

Linguistics graduate students are housed in the Department of Linguistics as their primary affiliation. Our graduate students have access to the departmental labs. The department houses a phonetics lab, a quantitative semantics lab, a computational linguistics lab, and a theoretical syntax and semantics lab. These labs provide space for student and faculty research.

Mission Statement and Strategic Goals

Linguistics offers students an opportunity to engage in scientific study of human language. This includes the structures underlying sound (phonetics and phonology), form (syntax, morphology), and meaning (semantics, pragmatics). Our department emphasizes a balance of theoretical and empirical work that encourages the use of firsthand evidence and gives our students the ability to understand, challenge, and defend theoretical claims.

http://www.sas.rochester.edu/lin/graduate/index.html

Graduate Faculty Information

Maya Ravindranath Abtahian, PhD, *University of Pennsylvania*
Associate Professor
Director, Graduate Studies
Primary Appointment(s): Linguistics

Ash Asudeh, PhD, *Stanford University*
Professor
Primary Appointment(s): Department of Linguistics

Greg Carlson, PhD, *University of Massachusetts Amherst*
Professor Emeritus
Primary Appointment(s): Linguistics

C. M. Downey, PhD, *University of Washington*
Assistant Professor
Primary Appointment(s): Department of Linguistics
Joint Appointment(s): The Goergen Institute for Data Science

Nadine Grimm, PhD, *Humboldt University Berlin*
Associate Professor
Primary Appointment(s): Linguistics

Scott Grimm, PhD, *Stanford University*
Associate Professor
Chair, Department of Linguistics
Primary Appointment(s): Linguistics
Joint Appointment(s): Data Science

Joyce M. McDonough, PhD, *University of Massachusetts Amherst*
Professor
Richard L. Turner Professor of Linguistics
Primary Appointment(s): Linguistics
Affiliation: Susan B. Anthony Institute

Asia Pietraszko, PhD, *University of Chicago*
Associate Professor
Director, Undergraduate Studies
Primary Appointment(s): Linguistics

Jeffrey T. Runner, PhD, *University of Massachusetts Amherst*
Professor
Primary Appointment(s): Linguistics
Joint Appointment(s): Brain and Cognitive Sciences
Affiliation: Susan B. Anthony Institute

Aaron White, PhD, *University of Maryland*
Associate Professor
Director, Center for Language Sciences
Primary Appointment(s): Linguistics
Joint Appointment(s): Computer Science

Admissions

Applying to Doctoral Programs

We look for people with strong academic records, or interesting profiles, who show breadth and depth of interests, especially for pursuing interdisciplinary work, and with the potential for creativity in pursuing a successful linguistics research program. Many of our students have benefited from engaging in interdisciplinary work with other departments at the University of Rochester. These departments include computer science, philosophy, biomedical engineering, and brain and cognitive sciences, but we are open to other types of collaborations that might include diverse fields such as anthropology or music theory at Eastman. These interests should be addressed in the applicant's personal statement.

Applications for admission should include transcripts of all undergraduate and graduate coursework done at other institutions, three letters of recommendation (preferably from linguistics faculty), a statement of purpose that indicates the faculty member(s) with whom you would like to work, and a writing sample that demonstrates your ability to research a topic and write your results clearly. TOEFL, IELTS or Duolingo English proficiency exam scores are required for international students; this may be waived for students from certain countries whose native language is English or for students who have completed at least three years of full-time and in-person postsecondary study in certain countries.

Learn more about the application process here: http://www.sas.rochester.edu/lin/graduate/apply.html.

Applying to Master's Programs

For the three master's programs we offer—MA in Linguistics, MA in Language Documentation and Description, and MS in Computational Linguistics—we look for people with strong academic records or interesting profiles who a show breadth and depth of interests, especially for pursuing interdisciplinary work.

Applications for admission should include transcripts of all undergraduate and graduate coursework done at other institutions, three letters of recommendation (preferably from linguistics faculty), a statement of purpose that indicates the faculty member(s) with whom you would like to work, and a writing sample that demonstrates your ability to research a topic and write your results clearly. TOEFL, IELTS or Duolingo English proficiency exam scores are required for international students; this may be waived for students from certain countries whose native language is English or for students who have completed at least three years of full-time and in-person postsecondary study in certain countries.

Learn more about the application process here: http://www.sas.rochester.edu/lin/graduate/apply.html

Academics

Master's Degrees and Requirements

The Department of Linguistics offers three master's degrees: MA in Linguistics, MA in Language Documentation and Description, and MS in Computational Linguistics. All programs are set up for those who want a background in linguistic analysis

and methodology. There are two general paths of study. Plan B (traditional track) is focused on providing students with a background in contemporary linguistics and linguistic subfields through coursework and a final master's essay and presentation. Plan A is a research track for students who come with prior coursework in linguistics and a research project in mind. Plan A allows students to focus on a research project with a faculty member and requires a thesis of original work presented at the end of the second year. Please see the master's handbook for specific coursework expectations for each plan: http://www.sas.rochester.edu/lin/assets/pdf/ma-handbook.pdf.

Doctoral Degrees and Requirements

Graduate students in our PhD program are required to take eight foundational courses, one in each subfield of linguistics (phonetics/phonology, semantics, syntax, statistical methods, field methods, morphology, language variation and change, and research methods); take four electives, including at least one seminar; and write two Qualifying Papers at the end of the second and third year in a topic of their choice related to the student's interests. In total, 90 credits of coursework and research credits are required for the PhD.

GRADUATE COURSE TITLES

LING 404. History of Linguistic Thought
LING 405. Intro to Historical Linguistics
LING 410. Intro to Language Sound Systems
LING 415. Languages of Africa
LING 420. Intro to Syntax
LING 424. Intro to Computational Linguistics
LING 425. Intro to Semantic Analysis
LING 426. Morphology
LING 427. Phonetics
LING 428. Lexical Semantics
LING 437. Phonology
LING 440. Language Variation and Change
LING 445. Philosophy of Language
LING 450. Data Science for Linguists
LING 460. Syntactic Theory I
LING 461. Constraint-Based Syntax
LING 462. Experimental Syntax
LING 465. Formal Semantics
LING 466. Pragmatics
LING 468. Computational Semantics
LING 470. Preserving Diversity in Language and Culture
LING 471. LDD Field Methods
LING 482. Deep Learning Methods in Computational Linguistics
LING 488. Topics in Language Contact
LING 491. Master's Reading in Linguistics
LING 495. Master's Research in Linguistics
LING 501. Research Methods in Linguistics
LING 520. Syntactic Theory II
LING 526. Morphological Theory
LING 527. Prosody
LING 537. Seminar in Phonetics and Phonology
LING 560. Seminar in Syntax
LING 589. Graduate Field Methods
LING 590. Supervised Teaching
LING 591. PhD Reading Course in Linguistics
LING 595. PhD Research in Linguistics
LING 595A. PhD Research in Absentia
LING 895. Continuation of Master's Enrollment
LING 897. Master's Dissertation
LING 897A. Master's Dissertation in Absentia
LING 897B. Master's Dissertation – Study Abroad
LING 999. Doctoral Dissertation
LING 999A. Doctoral Dissertation in Absentia

Literary Translation Program

Donatella Stocchi-Perucchio
Program Director

Overview

Literary translation at the University of Rochester provides a multifaceted approach to the art, technique, and business of translation by combining academic rigor, strong practical training, and intensive professional development through internships with Open Letter, the University's renowned imprint for literature in translation.

www.sas.rochester.edu/lts/

Graduate Faculty Information

Joanne Bernardi, PhD, *Columbia University*
Professor
Head, Japanese Program
Primary Appointment(s): Modern Languages and Cultures
Joint Appointment(s): Visual and Cultural Studies
Affiliation(s): Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Lisa Cerami, PhD, *Princeton University*
Associate Professor, Research Assistant Professor
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

Myounghee Cho, PhD, *Princeton University*
Assistant Professor
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

John Givens, PhD, *University of Washington*
Professor
Head, Russian Program
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

Jennifer Grotz, PhD, *University of Houston*
Professor
Arthur Satz Professor of the Humanities
Primary Appointment(s): English
Affiliation: Literary Translation Studies

John Michael, PhD, *Johns Hopkins University*
Professor
John Hall Deane Professor of Rhetoric and Poetry; Director, American Studies
Primary Appointment(s): English
Joint Appointment(s): Visual and Cultural Studies
Affiliation: Frederick Douglass Institute, Literary Translation Studies, Susan B. Anthony Institute

Julie Papaioannou, PhD, *University of Rochester*
Professor
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

Chad Post, BA, *Michigan State University*
Director, Open Letter Press
Affiliation: Literary Translation Studies

Ryan Prendergast, PhD, *Emory University*
Associate Professor
Chair, Modern Languages and Cultures
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Anna Rosensweig, PhD, *University of Minnesota*
Associate Professor
Director, Graduate Program in Visual and Cultural Studies
Primary Appointment(s): Modern Languages and Cultures
Joint Appointment(s): Visual and Cultural Studies
Affiliation: Literary Translation Studies

Steven Rozenski, PhD, *Harvard University*
Associate Professor
Primary Appointment(s): English
Affiliation: Literary Translation Studies

Claudia Schaefer, PhD, *Washington University in St. Louis*
Professor
Rush Rhees Chair
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Stephen Schottenfeld, MFA, *University of Iowa*
Associate Professor
Primary Appointment(s): English
Affiliation: Literary Translation Studies

Joanna Scott, MA, *Brown University*
Professor
Roswell Smith Burrows Professor of English; Director, Literary Arts Programs
Primary Appointment(s): English
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Donatella Stocchi-Perucchio, PhD, *Cornell University*
Professor
Arnold Lisio '56, '61M (MD) and Anne Moore Lisio, MD Endowed Distinguished Professor in Italian Language and Culture; Head, Italian Program; Associate Professor of Modern Languages and Culture
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

Liz Evans Weber, PhD, *University of California, Los Angeles*
Associate Professor, Research Assistant Professor
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies and East Asian Studies

Admissions

Applying to Master's Programs

To apply to the Master of Arts in literary translation, students must have a bachelor's degree or higher in a related field. The application includes an online application, application fee, official transcripts, three letters of recommendation, a translation sample (approximately 20 pages of fiction or drama, 200 lines of poetry) and copies of corresponding pages from source text. The application also includes a personal statement describing 1) career and educational goals, 2) prior experience with literary studies, creative writing, translation, and languages other than English, and 3) proficiency in a second foreign language and literary tradition.

Applying to Advanced Certificates

The Advanced Certificate in Literary Translation is open to matriculated University of Rochester graduate students who want to pursue literary translation but do not want to write a master's thesis. The certificate can complement a number of programs and is equally suited for new translators and seasoned translators. Interested students should contact the program director, Susan Gustafson.

Academics

Advanced Certificate Requirements

The advanced certificate requires 20 credits of graduate coursework in literary and translation studies. This coursework involves a core set of courses, plus a number of electives in literary topics. Students have the option of completing an internship in publishing.

Master's Degree Requirements

The Master's program requires a minimum of 30 credits of graduate coursework in literary and translation studies. This involves a core set of courses, plus a number of electives in literary topics. Students have the option of completing an internship in publishing. All students must complete a thesis project, typically involving an annotated translation.

GRADUATE COURSE TITLES

LTST 400. Studies in Translation
LTST 401. Translation Portfolio
LTST 402. Writing and Translation Workshop (fiction)
LTST 403. Writing and Translation Workshop (poetry)
LTST 406. Translation and World Literature
LTST 410. Introduction to Literary Publishing
LTST 431. French Literature in Translation
LTST 462. Colonial Latin American Literature
LTST 465. Don Quixote: Book, Myth, Image
LTST 491. Master's Reading Course
LTST 493. Master's Essay
LTST 495. Master's Research
LTST 895. Continuation of Master's Enrollment
LTST 897. Master's Dissertation
LTST 899. Master's Dissertation

Mathematics

Paul Funkenbusch
Chair

Allan Greenleaf and Sevak Mkrtchyan
Co-Directors of Graduate Studies

Overview

The University of Rochester Department of Mathematics invites you to pursue a PhD with our well-respected faculty. The department has active research groups in: algebra and number theory, analysis, combinatorics, geometry, probability, ergodic theory, mathematical physics, and topology.

http://www.sas.rochester.edu/mth/

Graduate Faculty Information

Xuwen Chen, PhD, *University of Maryland*
Professor
Primary Appointment(s): Mathematics

Dan Geba, PhD, *Princeton University*
Professor
Primary Appointment(s): Mathematics

Steven Gonek, PhD, *University of Michigan*
Professor
Chair, Department of Mathematics
Primary Appointment(s): Mathematics

Allan Greenleaf, PhD, *Princeton University*
Professor
Co-Director, Graduate Studies
Primary Appointment(s): Mathematics

Alex Iosevich, PhD, *University of California, Los Angeles*
Professor
Primary Appointment(s): Mathematics

Naomi Jochnowitz, PhD, *Harvard University*
Associate Professor
Primary Appointment(s): Mathematics

Stephen Kleene, PhD, *Johns Hopkins University*
Associate Professor
Primary Appointment(s): Mathematics

Arjun Krishnan, PhD, *New York University*
Associate Professor
Primary Appointment(s): Mathematics

Saul Lubkin, PhD, *Harvard University*
Professor
Primary Appointment(s): Mathematics

Sevak Mkrtchyan, PhD, *University of California, Berkeley*
Associate Professor
Co-Director, Graduate Studies
Primary Appointment(s): Mathematics

Carl Mueller, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Mathematics

Jonathan Pakianathan, PhD, *Princeton University*
Professor
Primary Appointment(s): Mathematics

Doug Ravenel, PhD, *Brandeis University*
Professor
Primary Appointment(s): Mathematics

Juan Rivera-Letelier, PhD, *University of Paris Sud*
Professor
Primary Appointment(s): Mathematics

Sema Salur, PhD, *Michigan State University*
Professor
Primary Appointment(s): Mathematics

Dinesh Thakur, PhD, *Harvard University*
Professor
Primary Appointment(s): Mathematics

Thomas Tucker, PhD, *University of California at Berkeley*
Professor
Primary Appointment(s): Mathematics

Admissions

Applying to Doctoral Programs

It is important for all incoming graduate students to have a good foundation in the following areas: mathematical maturity, set theory, algebra, linear algebra, analysis, and topology. Students are admitted only in September.

Application materials include:

- Unofficial transcripts from all post-secondary institutions
- Statement of purpose
- 3 Letters of Recommendation
- Resume/CV
- English Proficiency Exam Scores (students whose native language is not English)
- GRE Scores, both General and Math subject exam (optional)

Applying to Master's Programs

The department only offers an *en passant* master's degree. Students may only apply to the PhD program.

Academics

Master's Degrees and Requirements

The department offers the Master of Arts (Plan B) for students admitted to the PhD program. The MA requires 30 hours of coursework, including five of the seven core courses listed below. Up to 6 of the required 30 credit hours can come from reading courses. The candidate may pass a written preliminary exam in lieu of taking a corresponding core course, but the credit hour requirement must still be satisfied. The joint MA in mathematics and statistics requires 36 credit hours.

CORE COURSES

MATH 403. Theory of Probability
MATH 436. Algebra I
MATH 437. Algebra II
MATH 440. General Topology
MATH 453. Differentiable Manifolds
MATH 471. Analysis I
MATH 467. Analysis II

Doctoral Degrees and Requirements

The PhD in mathematics requires a total of 90 credit hours, including seven core courses and five formal 400- or 500-level courses which are not core courses. Students must take four written preliminary exams. A one-credit professional development course is taken during the first fall semester in the PhD program. A one-credit current topics in math course is taken during the second fall semester. Students will also complete an oral preliminary exam and defend a doctoral thesis. Finally, students must also satisfy a three-year teaching requirement, fulfilled by teaching assistantships. This teaching component often includes a combination of teaching of recitations, workshops, and/or grading homework assignments.

GRADUATE COURSE TITLES

MATH 403. Theory of Probability
MATH 436. Algebra I
MATH 437. Algebra II
MATH 440. General Topology
MATH 453. Differentiable Manifolds
MATH 471. Analysis I
MATH 467. Analysis II
MATH 472. Analysis III
MATH 491. Master's Readings in Math
MATH 492. Special Projects
MATH 493. Master's Essay
MATH 504. Stochastic Processes
MATH 506. Topics in Probability Theory
MATH 507. Topics in Advanced Probability
MATH 528. Introduction to p-adic Analysis
MATH 530. Elliptic Curves
MATH 537. Commutative Algebra
MATH 538. Algebraic Geometry I
MATH 539. Algebraic Geometry II
MATH 546. Cohomology groups
MATH 547. Topics in Differential Geometry
MATH 548. Lie Groups and Lie Algebras
MATH 549. Topics in Algebraic Topology
MATH 550. Equivariant Topology
MATH 557. Topics in Differential Geometry
MATH 562. Fourier Analysis
MATH 565. Topics in Partial Differential Equation
MATH 568. Topics in Number Theory
MATH 569. Topics in Analytic Number Theory
MATH 570. Topics in Ergodic Theory and Arithmetic Geometry
MATH 571. Complex Dynamics and Statistical Mechanics
MATH 578. Topics in Harmonic Analysis
MATH 585. Topics in Mathematical Physics
MATH 589. Topics in Inverse Problems
MATH 590. Supervised College Teaching
MATH 591. PhD Readings in Math
MATH 594. Internship
MATH 595. PhD Research in Math
MATH 595A. PhD Research in Absentia
MATH 597. Seminar
MATH 890. Summer in Residence – MA
MATH 895. Continuation of Master's Enrollment
MATH 897. Master's Dissertation
MATH 899. Master's Dissertation
MATH 985. Leave of Absence
MATH 986V. Full Time Visiting Student
MATH 990. Summer in Residence
MATH 995. Continuation of Doctoral Enrollment
MATH 997. Doctoral Dissertation
MATH 997A. Doctoral Dissertation in Absentia
MATH 999. Doctoral Dissertation
MATH 999A. Doctoral Dissertation in Absentia
MATH 999B. In Absentia Abroad

Modern Languages and Cultures

Ryan Prendergast
Chair

Overview

In the Department of Modern Languages and Cultures, we encourage the broadening of linguistic skills in foreign languages, as well as the acquisition of new languages, from elementary to advanced levels of study. We teach Chinese, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, and Spanish. In our departmental and interdepartmental programs, faculty and students explore both national traditions and global connections as reflected in languages, films, digital media, and the arts and cultures around the world. Addressing international issues and concerns in cultures other than English-speaking ones produces knowledge, argumentation skills, dialogue, and debate; flexible thinking and written argumentation; global rather than local ideas, and an openness to difference.

https://www.sas.rochester.edu/mlc/

Graduate Faculty Information

Joanne Bernardi, PhD, *Columbia University*
Professor of Japanese and Visual and Cultural Studies
Head, Japanese Program; Director, Mellon Digital Humanities Program
Primary Appointment(s): Modern Languages and Cultures
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation(s): Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

William H. Bridges IV, PhD, *Princeton*
Associate Professor of Modern Languages and Cultures
Arthur Satz Professor of the Humanities
Primary Appointment(s): Modern Languages and Cultures
Affiliation(s): Frederick Douglass Institute, Film and Media Studies

Lisa Cerami, PhD, *Princeton*
Associate Professor of German
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

Vialcary Crisóstomo Tejada, PhD, *University of Connecticut*
Assistant Professor of Spanish and Comparative Literature
Primary Appointment(s): Modern Languages and Cultures

Martin Dawson, PhD, *Duke University and the University of North Carolina at Chapel Hill*
Visiting Assistant Professor of German
Primary Appointment(s): Modern Languages and Cultures

Robert Doran, PhD, *Stanford;* PhD, *Sorbonne Nouvelle-Paris III*
Professor of French and Comparative Literature
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Music Theory (ESM)

John Givens, PhD, *University of Washington*
Professor of Russian
Head, Russian Program
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

June J. Hwang, PhD, *University of California Berkeley*
Associate Professor of German
Director, Susan B. Anthony Institute for Gender, Sexuality, and Women's Studies
Primary Appointment(s): Modern Languages and Cultures
Affiliation(s): Susan B. Anthony Institute, Film and Media Studies

Cilas Kemedjio, PhD, *The Ohio State University*
Professor of Black Studies, Professor of French
Primary Appointment(s): Black Studies
Affiliation(s): Modern Languages and Cultures, Susan B. Anthony Institute

Julie Papaioannou, PhD, *University of Rochester*
Professor of Instruction in French
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

Ryan Prendergast, PhD, *Emory University*
Associate Professor of Spanish
Chair, Department of Modern Languages and Cultures
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Raúl Rodríguez-Hernández, PhD, *Cornell University*
Associate Professor of Spanish
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Anna Rosensweig, PhD, *University of Minnesota*
Associate Professor of French and Visual and Cultural Studies
Director, Graduate Program in Visual and Cultural Studies
Primary Appointment(s): Modern Languages and Cultures
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Literary Translation Studies

Rita Safariants, PhD, *Yale University*
Assistant Professor of Russian
Primary Appointment(s): Modern Languages and Cultures

Claudia Schaefer, PhD, *Washington University in St. Louis*
Professor of Modern Languages and Cultures, Professor of Film and Media Studies
Rush Rhees Professor
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Donatella Stocchi-Perucchio, PhD, *Cornell University*
Associate Professor of Modern Languages and Cultures
Arnold Lisio '56, '61M (MD) and Anne Moore Lisio, MD Endowed Distinguished Professor in Italian Language and Culture; Head, Italian Program
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies

Lin Meng Walsh, PhD, *Stanford University*
Visiting Assistant Professor of Japanese
Primary Appointment(s): Modern Languages and Cultures

Admissions

The Department of Modern Languages and Cultures does not offer doctoral or master's degree programs.

Academics

The Department of Modern Languages and Cultures does not offer doctoral or master's degree programs.

GRADUATE COURSE TITLES

Comparative Literature
CLTR 402B. Holocaust: Affect and Absence
CLTR 414M. Atomic Creatures: Godzilla
CLTR 414N. Tourist Japan
CLTR 415B. Russian Cinema After the Fall
CLTR 416A. Latin American Film
CLTR 417B. Race and Gender in Popular Film
CLTR 421. Mutilated Bodies: From Traditions to Cutting-Edge Technologies
CLTR 429A. Biographies of Emancipation in the Black World
CLTR 429B. Humanitarianism and Social Insecurities
CLTR 430. Film as Object
CLTR 430A. French Social Thought
CLTR 431E. Black Paris
CLTR 434. Paris, Capital of the Nineteenth Century
CLTR 438. On the Move: Ethnographic Films
CLTR 438A. Revolutions and Revolt
CLTR 440A. Philosophy of Music
CLTR 441A. Performance Studies
CLTR 442B. Capitalism, Culture, Controversy: The Revolutionary Cinema of Pier Paolo Pasolini
CLTR 447A. Politics and Culture in Fascist Italy
CLTR 450. Nabokov – Unusual Émigré
CLTR 452. Bright Lights, Big City
CLTR 455C. Chekhov and the Modern Short Story
CLTR 462. Art History Colloquium
CLTR 475. French Philosophy Since 1960
CLTR 477. Postmodernism: Fiction, Philosophy, Media
CLTR 480. Aesthetics
CLTR 484. Translation and World Literature
CLTR 487. Studies in Translation
CLTR 492. French Feminisms
CLTR 494. Italian Neorealist Directors: Rossellini, De Sica, Visconti
CLTR 592. Languages Learning and Teaching

French
FREN 412. French Literature in Translation
FREN 427. Laughing Matters: Comedy in Early Modern France
FREN 428. Humanitarianism and Social Insecurities
FREN 432. Hugo's "Les Miserables"
FREN 434. Paris, Capital of the Nineteenth Century
FREN 437. Performance Studies
FREN 443. Mutilated Bodies: From Traditions to Cutting-Edge Technologies
FREN 444. Crimes of Passion: Love and Death on the Classical French Stage
FREN 447. Black Paris
FREN 449 . Napoleon: Image, Myth, History
FREN 457. Sex, Lies, and Secrets: Libertinism in Early Modern France
FREN 462. French Philosophy Since 1960
FREN 465. Aesthetics
FREN 471. Introduction to the Francophone Literature
FREN 474. Caribbean Novel and Its Theory
FREN 477. Postmodernism: Fiction, Philosophy, Media
FREN 492. French Feminisms
FREN 493. Modern French Theory
FREN 494. Queer Theory
FREN 496. Philosophy of Music

German
GRMN 424. Woman Writers and Rebels
GRMN 438. Revolutions and Revolt
GRMN 447. Holocaust: Affect and Absence
GRMN 448. On the Move: Ethnographic Films
GRMN 452. Bright Lights, Big City

Japanese
JPNS 407. Film as Object
JPNS 414. Atomic Creatures: Godzilla
JPNS 419. Tourist Japan
JPNS 445. Japanese Science Fiction and Planetary Possible Futures
JPNS 485. Director Studies: Akira Kurosawa
JPNS 494. Hayao Miyazaki and Planet Ghibli

Spanish
SPAN 415. Don Quixote: Book, Myth, Image
SPAN 418. Saints, Sinners, and Sovereigns
SPAN 449D. Bunel, Dali, Lorca
SPAN 449E. Reading Fable, Telling Tales
SPAN 451. Quemaremos el cielo si es preciso: Subversive Narratives of the Afro-Caribbean
SPAN 457. Spanish American Theater and Poetry
SPAN 462H. Spanish American Crime Fiction
SPAN 466. The Spanish American Gothic
SPAN 482. Si el Norte Fuera el Sur: Latinx Literature and Thought
SPAN 487A. Latin American Film
SPAN 488. Spanish Film
SPAN 499. What If…?

Music

Matthew BaileyShea
Chair

Overview

A hallmark of the Arthur Satz Department of Music is that its students can broaden their horizons to encompass not only Western expressions of classical, jazz, and contemporary music, but also the music of other cultures. The department is well served in this by an outstanding faculty that includes nationally and internationally recognized experts in musical theater, popular music, early music, and women composers. Faculty expertise ranges widely from Handel's operas to rock 'n' roll, from the music of Black Americans to Kurt Weill, from 12th-century composer Hildegard of Bingen to the evolution of popular music in Zimbabwe. The department, though separate from the Eastman School of Music in downtown Rochester, maintains close ties with Eastman. In 2020, the Department of Music became the first named department in the School of Arts & Sciences, thanks to a gift from former music major and influential arts education leader Arthur Satz '51.

https://www.sas.rochester.edu/mur/

Graduate Faculty Information

Matthew BaileyShea, PhD, *Yale University*
Professor
Chair, Arthur Satz Department of Music
Primary Appointment(s): Music (A&S), Music Theory (ESM)

John Covach, PhD, *University of Michigan*
Professor
Director, Institute for Popular Music
Primary Appointment(s): Music (A&S), Music Theory (ESM)

Cory Hunter, PhD, *Princeton University*
Assistant Professor
Primary Appointment(s): Music (A&S), Musicology (ESM)
Affiliation: Frederick Douglass Institute

Hanisha Kulothparan, PhD (exp 2025), *University of Rochester, Eastman School of Music*
Assistant Professor
Primary Appointment(s): Music

Jennifer Kyker, PhD, *University of Pennsylvania*
Professor
Primary Appointment(s): Music (A&S), Musicology (ESM)
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Honey Meconi, PhD, *Harvard University*
Professor
Arthur Satz Professor of Music
Primary Appointment(s): Music (A&S), Musicology (ESM)
Affiliation: Susan B. Anthony Institute

Admissions

The Satz Department of Music does not offer a graduate program, but graduate-level courses are available.

GRADUATE COURSE TITLES

MUSC 410. Ngoma: Drum, Dance, South Africa
MUSC 436. Music, Ethnography, and HIV/AIDS
MUSC 468. West African Drumming
MUSC 484. Sansifanyi Ensemble

Philosophy

Alison Peterman
Chair
Jens Kipper
Director of Graduate Studies

Overview

The Department of Philosophy offers a program of study leading to the degree Doctor of Philosophy. It emphasizes training for scholarly research and teaching in ethics, epistemology, meta- physics, philosophy of science, history of philosophy, and logic. The department cooperates with the Departments of Computer Science, Brain and Cognitive Sciences, and Linguistics in a graduate program in cognitive science. A detailed description of these programs may be obtained upon request from the department.

The department provides a rich and active intellectual environment. In addition to regular courses and frequent individual tutorials, there is an active colloquium series with numerous visiting lecturers and presentations by Rochester faculty and students. The graduate students organize a biennial Epistemology Conference. Faculty and graduate students generally organize several reading groups throughout the year on topics of mutual interest.

The expertise of our faculty spans epistemology, ethics, the history of philosophy, logic, philosophy of mathematics, metaphysics, philosophy of language, philosophy of mind, philosophy of religion, and social and political philosophy. In ethics, we have experts in normative ethical theory, bioethics, metaethics, and AI ethics.

Mission Statement and Strategic Goals

The Department of Philosophy principally aims to provide a rigorous and comprehensive doctoral education in philosophy in a warm, diverse, inclusive, and welcoming environment. We value being part of the broader intellectual community at the University of Rochester, and of the broader philosophical community across the globe. We strive to prepare our PhD students to do philosophical work at the highest levels, whether they intend to enter careers in philosophy or to apply their intensive training to other academic disciplines or other professions. We aim to produce researchers who write with exacting precision, and can readily understand and analyze theories, arguments, and ideas as they exist across academia and human life.

https://www.sas.rochester.edu/phl/

Graduate Faculty Information

Paul Audi, PhD, *Princeton University*
Professor of Philosophy
Chair, Department of Philosophy
Primary Appointment(s): Philosophy

Earl Conee, PhD, *University of Massachusetts Amherst*
Professor of Philosophy
Primary Appointment(s): Philosophy

Randall Curren, PhD, *University of Pittsburgh*
Professor of Philosophy
Primary Appointment(s): Philosophy

Richard Dees, *University of Michigan*
Professor of Philosophy, Professor of Medical Humanities and Bioethics
Director, Bioethics Program; Director, Public Health Program
Primary Appointment(s): Philosophy, Medical Humanities and Bioethics

Richard Feldman, *University of Massachusetts*
Professor of Philosophy
Primary Appointment(s): Philosophy

William J. FitzPatrick, PhD, *University of California, Los Angeles*
Professor
Gideon Webster Burbank Professor of Intellectual and Moral Philosophy
Primary Appointment(s): Philosophy

Grace Helton, PhD, *New York University*
Assistant Professor of Philosophy
Primary Appointment(s): Philosophy

Jonathan Herington, PhD, *Australian National University*
Assistant Professor of Philosophy
Primary Appointment(s): Philosophy

Jens Kipper, PhD, *University of Cologne*
Associate Professor of Philosophy
Primary Appointment(s): Philosophy

Alison Peterman, PhD, *Northwestern University*
Associate Professor of Philosophy
Primary Appointment(s): Philosophy

Zeynep Soysal, PhD, *Harvard University*
Associate Professor of Philosophy
Primary Appointment(s): Philosophy

Rush Stewart, PhD, *Columbia University*
Associate Professor of Philosophy
Primary Appointment(s): Philosophy

Rosa Terlazzo, PhD, *Australian National University*
Associate Professor of Philosophy
Primary Appointment(s): Philosophy

Admissions

Applying to Doctoral Programs

Applicants to the philosophy graduate programs must submit an online application with the following materials:

- A sample of your written work in philosophy
- A copy of your transcript
- Three or more confidential letters of recommendation
- A personal statement that addresses why you want to pursue graduate study in philosophy, why you want to pursue that study at the University of Rochester, and what areas of philosophy you are most interested in
- A list of all prior courses in philosophy
- TOEFL scores (for non-native English speakers)

Applying to Master's Programs

Students are typically not admitted to the MA in Philosophy program; rather, they earn an MA *en passant*.

Academics

Master's Degrees and Requirements

The requirements for the MA include 30 hours of coursework and an exam or master's thesis. .

Doctoral Degrees and Requirements

The requirements for the PhD include 90 credits of coursework and a dissertation in philosophy. Students will complete six courses in philosophy at the 400 level, including courses in logic, history of ancient philosophy, and history of modern philosophy. Students will complete nine courses in philosophy at the 500 level, with at least six being graduate seminars (not independent studies). Primary and secondary exams are required in subfields of philosophy. Students will participate in a writing seminar, write a dissertation proposal, and write a book-length dissertation. It is designed to be completed in five years..

GRADUATE COURSE TITLES

PHIL 412. Probability, Inference and Decision
PHIL 414. Logical Methods
PHIL 415. Intermediate Logic
PHIL 416. Mathematical Logic
PHIL 418. Philosophy of Math
PHIL 420. Recent Ethical Theory
PHIL 423. Social and Political Philosophy
PHIL 426. Philosophy of Law
PHIL 428. Public Health Ethics
PHIL 429. Philosophy of Education
PHIL 430. Environmental Justice
PHIL 431. Philosophy of Race and Gender
PHIL 435. Data, Algorithms, and Justice
PHIL 442. Metaphysics
PHIL 443. Theory of Knowledge
PHIL 444. Philosophy of Mind

PHIL 446. Social Character of Knowledge
PHIL 447. Philosophy of Language
PHIL 450. Philosophy of Action
PHIL 452. Philosophy of Science
PHIL 457. Philosophy of Artificial Intelligence
PHIL 465. Selected Topics in Ancient Philosophy
PHIL 470. Selected Topics in Modern Philosophy
PHIL 491. Master's Reading in Philosophy
PHIL 493. Master's Essay
PHIL 495. Master's Thesis Research
PHIL 503. Theory of Knowledge
PHIL 515. Selected Topics in Philosophy of Mind
PHIL 516. Selected Topics in Philosophy of Language
PHIL 517. Selected Topics in Ethics
PHIL 518. Selected Topics in Moral Theory
PHIL 527. Selected Topics in Modern Philosophy
PHIL 542. Selected Topics in Metaphysics
PHIL 544. Selected Topics in Philosophy of Mind
PHIL 552. Selected Topics in Philosophy of Science
PHIL 560. Writing Seminar
PHIL 580. Supervised Instruction in Philosophy
PHIL 581. Supervised Instruction Continued
PHIL 591. PhD Readings in Philosophy
PHIL 595. PhD Research in Philosophy

Physics and Astronomy

Steven Manly
Chair

Segev BenZvi
Director of Graduate Studies

Overview

The Department of Physics and Astronomy offers a graduate curriculum leading to a PhD degree in physics or in physics and astronomy. The entire program of research and study is designed to emphasize fundamental physical principles and to prepare students for academic, industrial, or government employment. The department has strong research efforts in experimental/observational and theoretical areas of astronomy and astrophysics, quantum optics, biological physics, condensed matter physics, particle/nuclear physics, cosmology, and high energy density plasma and laser physics.

Students are encouraged to begin research activity in their first year of study. All PhD candidates are required to complete one year of teaching assistantship. Research and teaching activity is required of all students working toward the PhD degree.

Mission Statement and Strategic Goals

The faculty and students of the Department of Physics and Astronomy are engaged in explaining and predicting the behavior of the physical world around us, including everything from subatomic particles to supernovae. The department has internationally recognized research efforts in virtually all major subfields of physics and astronomy. Our mission is to provide students with a rigorous academic background, engage them in research at the forefront of physics and astronomy, and provide the skills they need to become leaders in their post-graduate careers.

https://www.pas.rochester.edu/

Graduate Faculty Information

Govind Agrawal, PhD, *Indian Institute of Technology*
Professor
Dr. James C. Wyant Professor of Optics, Distinguished Scientist in the Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy, Laboratory for Laser Energetics

Segev BenZvi, PhD, *Columbia University*
Associate Professor
Primary Appointment(s): Physics

Riccardo Betti, PhD, *Massachusetts Institute of Technology*
Professor
Robert L. McCroy Professor of Mechanical Engineering; Chief Scientist, Laboratory for Laser Energetics; Distinguished Scientist, Laboratory for Laser Energetics; Director, Fusion Science of Center of Extreme States of Matter and Fast Ignition
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics and Astronomy, Laboratory for Laser Energetics

Nicholas P. Bigelow, PhD, *Cornell University*
Professor
Lee A. DuBridge Professor of Physics; Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Physics and Astronomy
Joint Appointment(s): Optics, Laboratory for Laser Energetics
Affiliation: Materials Science

Eric G. Blackman, PhD, *Harvard University*
Professor
Primary Appointment(s): Physics and Astronomy

Machiel Blok, PhD, *Delft University of Technology*
Assistant Professor
Primary Appointment(s): Physics
Affiliation: Materials Science

Mark F. Bocko, PhD, *University of Rochester*
Professor
Director, Emerging and Innovative Sciences
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Arie Bodek, PhD, *Massachusetts Institute of Technology*
Professor
George E. Pake Professor in Condensed Matter Physics
Primary Appointment(s): Physics and Astronomy

Robert Boyd, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Jaime Cardenas, PhD, *University of Alabama*
Assistant Professor
Primary Appointment(s): Optics
Joint Appointment(s): Physics
Affiliation: Materials Science

Jonathan Carroll-Nellenback, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Physics and Astronomy

Gilbert Collins, PhD, *The Ohio State University*
Professor
Tracy Hyde Harris Professor of Mechanical Engineering; Associate Director, Science, Technology and Academics, Laboratory for Laser Energetics; Distinguished Scientist and Senior Scientist, Laboratory for Laser Energetics; Director, Center for Matter at Atomic Pressures
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics, Physics
Affiliation: Materials Science

Regina Demina, PhD, *Northeastern University*
Professor
Primary Appointment(s): Physics

Hanan Dery, PhD, *Technion – Israel Institute of Technology*
Professor
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Antonino Di Piazza, PhD, *University of Trieste*
Professor
Primary Appointment(s): Physics

Ranga Dias, PhD, *Washington State University*
Assistant Professor
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics

Joseph H. Eberly , PhD, *Stanford University*
Professor
Andrew Carnegie Professor of Physics
Primary Appointment(s): Physics and Astronomy
Joint Appointment(s): Optics

Ignacio Franco, PhD, *University of Toronto*
Associate Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Physics
Affiliation: Materials Science

Adam Frank, PhD, *University of Washington*
Professor
Helen & Fred Gowan Professor of Physics and Astronomy
Primary Appointment(s): Physics and Astronomy

Yongli Gao, PhD, *Purdue University*
Professor
Primary Appointment(s): Physics
Affiliation: Materials Science

Aran Garcia-Bellido, PhD, *Royal Holloway University*
Professor
Primary Appointment(s): Physics

Gourab Ghoshal, PhD, *University of Michigan*
Professor
Primary Appointment(s): Physics
Joint Appointment(s): Data Science

Pierre Alexandre Gourdain, PhD, *UCLA/Ecole Centrale de Lyon*
Associate Professor
Primary Appointment(s): Physics

Chunlei Guo, PhD, *University of Connecticut*
Professor
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics, Physics
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Ralf M. Haefner, PhD, *Oxford University*
Associate Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Physics, Computer Science, Data Science
Affiliation: Center for Visual Science

Gabriel Landi, PhD, *University of São Paulo*
Associate Professor
Primary Appointment(s): Physics

Steven L. Manly, PhD, *Columbia University*
Professor
Primary Appointment(s): Physics

Christopher Marshall, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Physics

Kevin S. McFarland, PhD, *University of Chicago*
Professor
Dr. Stephen Chu Professor of Physics
Primary Appointment(s): Physics and Astronomy

Lee Murray, PhD, *Harvard University*
Associate Professor
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Physics and Astronomy

Chaitanya Murthy,
Assistant Professor
Primary Appointment(s): Physics and Astronomy

Miki Nakajima, PhD, *California Institute of Technology*
Associate Professor
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Physics and Astronomy

John M. Nichol, PhD, *University of Illinois at Urbana-Champaign*
Associate Professor
Primary Appointment(s): Physics
Affiliation: Materials Science

Alice C. Quillen, PhD, *California Institute of Technology*
Professor
Primary Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Sarada G. Rajeev, PhD, *Syracuse University*
Professor
Primary Appointment(s): Physics
Joint Appointment(s): Mathematics

Chuang Ren, PhD, *University of Wisconsin-Madison*
Professor
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics, Laboratory for Laser Energetics

William Renninger, PhD, *Cornell University*
Assistant Professor
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy

Lewis Rothberg, PhD, *Harvard University*
Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Physics
Affiliation: Materials Science

James R. (Ryan) Rygg, PhD, *Massachusetts Institute of Technology*
Assistant Professor
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Wolf-Udo Schröder, PhD, *Technical University of Darmstadt*
Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Physics

Adam Sefkow, PhD, *Princeton University*
Assistant Professor
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics, Laboratory for Laser Energetics

Dominique Seguracox, PhD, *University of Illinois*
Assistant Professor
Primary Appointment(s): Physics and Astronomy

Roman Sobolewski, PhD, *Polish Academy of Sciences*
Professor
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics, Laboratory for Laser Energetics
Affiliation: Materials Science

Carlos R. Stroud Jr., PhD, *Washington University*
Professor
Primary Appointment(s): Optics
Joint Appointment(s): Physics

John A. Tarduno, PhD, *Stanford University*
Professor
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Physics and Astronomy

Stephen L. Teitel, PhD, *Cornell University*
Professor
Primary Appointment(s): Physics

Petros Tzeferacos, PhD, *University of Turin*
Professor
Primary Appointment(s): Physics and Astronomy

Nick Vamivakas, PhD, *Boston University*
Professor
Dean, Graduate Education and Postdoctoral Affairs, Arts, Sciences and Engineering
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Dan M. Watson, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Physics and Astronomy

Name: Frank L. H. Wolfs, PhD, *University of Chicago*
Professor
Primary Appointment(s): Physics

Stephen Wu, PhD, *University of California, Berkeley*
Assistant Professor
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Xi-Cheng Zhang, PhD, *Brown University*
Professor
M. Parker Givens Professor of Optics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy

Jianhui Zhong, PhD, *Brown University*
Professor
Primary Appointment(s): Imaging Sciences

Admissions

Applying to Doctoral Programs

Students are considered for admission after completing an online application. We do not have a minimum GPA required for application submission. We require at least three letters of recommendation from people who can comment on your potential for graduate study. General GRE test scores, as well as the Physics GRE subject test scores, are accepted but not required. We do not have minimum required scores for the GRE, GRE Physics, TOEFL, or IELTS. Our admissions committee will consider test scores in the context of the entire application, as we prefer to evaluate multiple parameters to determine the potential of each candidate. Our required statement of purpose has no specific required content but should include information that you would like the admissions committee to know about you and your aspirations to join our program.

Academics

Doctoral Degrees and Requirements

Candidates for the PhD degree are expected to complete eight advanced (400-level or higher) four-credit courses, at least two of which are specialty courses. These courses are generally taken during the first two years of study. A typical program for the PhD degree during the first year would include courses in mathematical methods, at least one course in quantum mechanics, and one each in electrodynamics and statistical mechanics. During the second year, courses would include one or two courses in mathematical methods, one or two courses in advanced quantum mechanics, one or two other advanced courses, and two specialty courses, chosen in consultation with the research advisor.

A formal assessment of the preliminary core coursework (403, 407, 415, and 418) is intended to ensure that each student has a comprehensive grasp of physics at the level of the core curriculum. Following the successful completion of the qualifying examination in year three, which involves an oral presentation to a faculty committee, each candidate for the degree must complete a significant piece of original research, which is then formally presented in the dissertation and must be defended in the final oral PhD examination.

GRADUATE COURSE TITLES

Physics
PHYS 401. Mathematical Methods for Optics and Physics
PHYS 403. Modern Statistics and Exploration
PHYS 405. Geometrical Methods of Physics
PHYS 406. Symmetries in Physics
PHYS 407. Quantum Mechanics I
PHYS 408. Quantum Mechanics II

PHYS 411. Advanced Mechanics
PHYS 412. Hydrodynamics
PHYS 413. Gravitation
PHYS 415. Electromagnetic Theory I
PHYS 418. Statistical Mechanics
PHYS 420. Introduction to Condensed Matter Physics
PHYS 422. Medical Imaging – Theory and Implementation
PHYS 429. Organic Electronics
PHYS 431. Nano-Optics
PHYS 434. Advanced Quantum and Nano-Optics Lab
PHYS 435. Principles of Lasers
PHYS 437. Nonlinear Optics
PHYS 438. Optical Communications Systems
PHYS 439. Nonlinear Optical Spectroscopy
PHYS 440. Nuclear and Particle Physics
PHYS 445. Advanced Nuclear Science Education Laboratory
PHYS 446. Nuclear Science and Technology
PHYS 451. Physics of Astrophysics I
PHYS 452. Physics of Astrophysics II
PHYS 453. Introduction to High Energy Density Physics
PHYS 454. Introduction to Plasma Physics I
PHYS 455. Plasma Physics II
PHYS 456. Compressible Flow
PHYS 457. Incompressible Flow
PHYS 458. Geometric Methods in Fluids
PHYS 459. Turbulence
PHYS 462. Medical Imaging – Theory and Implementation
PHYS 467. Ultrasound Imaging
PHYS 511. Field Theory
PHYS 52. Condensed Matter I
PHYS 531. Introduction to Quantum Optics
PHYS 532. Quantum Optics of the Electromagnetic Field
PHYS 552. Magnetohydrodynamics
PHYS 553. Laser Plasma Interactions
PHYS 55. Cosmological Physics
PHYS 556. Hydrodynamic Stability and Turbulence
PHYS 558. Introduction to Inertial Confinement Fusion
PHYS 564. High Energy Astrophysics
PHYS 573. Physics and Finance
PHYS 581. Particle Physics I
PHYS 582. Particle Physics II
PHYS 593. Quantum Nanostructures

Astronomy
ASTR 403. Experimental Techniques in Astronomy
ASTR 444. Observational Astronomy
ASTR 450. Stellar Atmospheres
ASTR 453. Introduction to Stellar Interiors and Atmospheres
ASTR 455. Introductory Radio Astronomy
ASTR 461. Astrophysics I
ASTR 462. Astrophysics II
ASTR 465. Galactic Structure
ASTR 551. Diffuse Matter in Space
ASTR 553. Stellar Interiors
ASTR 554. Cosmology
ASTR 563. Radio and Infrared Astronomy
ASTR 564. High Energy Astrophysics
ASTR 565. Formation of Stars and Planetary Systems
ASTR 570. Solar System Dynamics
ASTR 594. Observational Astrophysics

Political Science

John Duggan
Chair

David M. Primo
Director of Graduate Studies

Overview

The Department of Political Science offers a program of graduate study leading to the degree Doctor of Philosophy. The primary purpose of the PhD program is to train scholars who will contribute to the future development of political science through careers in research, teaching, or the private sector. The doctoral program typically entails five or six years of full-time study.

The program at Rochester involves a distinctive approach to the rigorous study of politics that emphasizes the development of formal theory and the analysis of quantitative evidence. The department offers a collegial environment in which graduate students and department faculty share ideas in the classroom and in research collaborations. The department hosts weekly seminars where graduate students and faculty present their own work and interact with leading scholars in the country.

Mission Statement and Strategic Goals

When William H. Riker came to Rochester in 1962, the department had a six-person faculty, a small undergraduate enrollment, and no graduate program. Apart from the individual scholarship of a few young faculty members, including Richard Fenno, the department was virtually unknown on the national stage. Yet within a decade, the department became one of the most intellectually exciting political science departments in the United States.

Dedicated to the highest levels of research, teaching, and institution-building, the department continues to build on its illustrious past. The department strives to train leaders in the science of politics, with a very specific notion of the mix of activities necessary to that endeavor. These include:

- Formal theory and attention to institutional mechanisms
- Rigorous empirical testing through sophisticated, theory-relevant statistical and qualitative methods
- Expertise about the real-world phenomena that motivate such theoretical and empirical analyses.

The department's strong emphasis on rigorous political science, along with the tools needed to conduct it at the highest level, sets it apart from departments at other universities. We are committed to producing research at the cutting edge of both formal modeling and statistical methodology, and we are equally committed to the principle that these systematic approaches be applied in the service of understanding the regularities of politics in the real world.

https://www.sas.rochester.edu/psc

Graduate Faculty Information

Scott Abramson, PhD, *Princeton University*
Professor
Primary Appointment(s): Political Science

Dan Alexander, PhD, *University of Chicago*
Assistant Professor
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Kevin A. Clarke, PhD, *University of Michigan*
Associate Professor
Primary Appointment(s): Political Science

James Druckman (as of Jan. 1, 2024), *PhD, University of California, San Diego*
Professor
Primary Appointment(s): Political Science

John Duggan, PhD, *California Institute of Technology*
Professor of Economics
Don Alonzo Watson Professor of Political Science
Primary Appointment(s): Political Science
Joint Appointment(s): Economics
Affiliation: Wallis Institute

Mark Fey, PhD, *California Institute of Technology*
Professor
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Anderson Frey, PhD, *University of British Columbia*
Associate Professor
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Gerald Gamm, PhD, *Harvard University*
Professor
Primary Appointment(s): Political Science
Joint Appointment(s): History

Hein Goemans, PhD, *University of Chicago*
Professor
Primary Appointment(s): Political Science

Gretchen Helmke, PhD, *University of Chicago*
Professor
Thomas H. Jackson Distinguished University Professor
Primary Appointment(s): Political Science

James Johnson, PhD, *University of Chicago*
Professor
Primary Appointment(s): Political Science

Tasos Kalandrakis, PhD, *University of California, Los Angeles*
Professor
Primary Appointment(s): Political Science
Joint Appointment(s): Economics
Affiliation: Wallis Institute

Mayya Komisarchik, PhD, *Harvard University*
Assistant Professor
Primary Appointment(s): Political Science

Bethany Lacina, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Political Science

Alexander Lee, PhD, *Stanford University*
Professor
Primary Appointment(s): Political Science

Bonnie M. Meguid, PhD, *Harvard University*
Associate Professor
Primary Appointment(s): Political Science

Casey Petroff, PhD, *Harvard University*
Assistant Professor
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

David M. Primo, PhD, *Stanford University*
Professor
Ani and Mark Gabrellian Professor
Primary Appointment(s): Political Science
Joint Appointment(s): Simon Business School

Lawrence Rothenberg, PhD, *Stanford University*
Professor
Corrigan-Minehan Professor of Political Science; Director, W. Allen Wallis Institute of Political Economy
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Curtis S. Signorino, PhD, *Harvard University*
Associate Professor
Primary Appointment(s): Political Science

Randall Stone, PhD, *Harvard University*
Professor of Political Science
Director, Skalny Center for Polish and Central European Studies
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Scott Tyson, PhD, *New York University*
Associate Professor
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Sidak Yntiso, PhD, *New York University*
Assistant Professor
Primary Appointment(s): Political Science

Admissions

Applying to Doctoral Programs

Students applying to the Political Science PhD program must complete an application consisting of the following elements:

- Personal statement
- Standardized tests
  - The GRE is required.
  - All international students are required to provide proof of English language proficiency through the submission of official test scores. Students may also apply for a waiver under certain conditions. Details are available on the application page.
- Transcripts
- Letters of recommendation
- A writing sample
- CV (optional)

All entering students are expected to have a basic command of spoken and written English. One year of college-level calculus is desirable, but not required. The deadline for submitting application materials is typically in early January (for a fall start date). There is an application fee.

Academics

Master's Degrees and Requirements

Students enrolled in the PhD program are eligible to receive a STEM-certified MA after completing 30 credit hours of coursework and passing the PhD qualifying examination.

Doctoral Degrees and Requirements

Students must complete at least 14 graded courses in the PhD program, all with a grade of B- or better. Incoming students must also complete a math camp held in August before their first year. All students take two courses in formal modeling (407, 408) and in statistical methods (404, 405) in their first year, in addition to exploring substantive fields.

The second year is spent on additional coursework and research culminating with the preparation of a research paper by the beginning of year three. Two fields of concentration (American Politics, Comparative Politics, Formal Theory, International Relations, Political Methodology, or Political Philosophy) must be completed by the end of fall semester of the third year. One of the two fields must be either Formal Theory or Political Methodology. Students must also complete two additional substantive courses beyond the minimum requirements for fields of concentration. In their third year, students complete a comprehensive literature survey in an area of research, due in the fall, and a third-year paper to be presented to the department at the end of their third year of study.

A STEM-certified Master of Arts degree is awarded after the student passes the PhD qualifying examination by the end of the third year of study. Writing the PhD thesis is the major task of the remainder of the program. In addition, all PhD students serve as teaching assistants during their third and fourth years.

GRADUATE COURSE TITLES

PSCI 404. Quantitative Methods 1
PSCI 405. Quantitative Methods 2
PSCI 407. Mathematical Modeling
PSCI 446. Environmental Law and Policy
PSCI 447. Green Markets: Environmental Opportunities and Pitfalls
PSCI 449. Environmental Policy in Action
PSCI 479. War and the Nation State
PSCI 482. Making Public Policy
PSCI 504. Causal Inference
PSCI 505. Quantitative Methods 3
PSCI 506. Advanced Topics in Methods
PSCI 507. Experiments in Political Science Research
PSCI 508. Theoretical Implications of Empirical Models
PSCI 512. Survey Methods
PSCI 513. Interest Group Politics
PSCI 518. Emergence of the Modern Congress
PSCI 527. Models of Domestic Institutions
PSCI 529. Race and Ethnic Politics in the United States
PSCI 530. Race, History, and Urban Politics
PSCI 535. Bureaucratic Politics
PSCI 540. American Political Institutions
PSCI 541. U.S. Political Behavior
PSCI 551. State Building and Conflict
PSCI 552. Dictatorship and Democracy
PSCI 555. Democratic Political Processes
PSCI 556. Political Institutions and Behavior
PSCI 557. Topics in Comparative Politics: Parties and Party Competition
PSCI 558. Comparative Parties and Elections
PSCI 559. Historical Political Economy
PSCI 561. Revealed Political Preferences
PSCI 564. Development and Political Economy
PSCI 565. Political Economy of Development
PSCI 566. International Relations Field Seminar I
PSCI 568. International Organization
PSCI 571. Quantitative Approaches to International Politics
PSCI 572. International Relations Field Seminar II
PSCI 573. Territory and Group Conflict
PSCI 575. Topics in Political Economy
PSCI 576. Graduate Research Seminar
PSCI 577. Theories of Conflict
PSCI 579. Politics of International Finance
PSCI 580. Models of Non-Democratic Politics
PSCI 584. Game Theory
PSCI 585. Dynamic Models: Structure, Computation, and Estimation
PSCI 586. Voting and Elections
PSCI 587. Structural Modeling and Estimation
PSCI 588. Models of Democratic Politics
PSCI 589. Advanced Formal Methods in Political Economy
PSCI 591. PhD Readings in Political Science
PSCI 594. Research Internship
PSCI 595. PhD Research in Political Science
PSCI 595A. PhD Research in Absentia
PSCI 995. Continuation of Doctoral Enrollment
PSCI 997. Doctoral Dissertation
PSCI 997A. Doctoral Dissertation in Absentia
PSCI 997B. Doctoral Dissertation in Absentia – Abroad
PSCI 999. Doctoral Dissertation
PSCI 999A. Doctoral Dissertation in Absentia
PSCI 999B. Doctoral Dissertation in Absentia – Abroad

Psychology

Jeremy Jamieson
Chair

Patrick Davies
Associate Chair

Harry Reis
Director of Graduate Studies

Christie Petrenko
Clinical Area Head

Judith Smetana
Developmental Area Head

Harry Reis
Social-Personality Area Head

Overview

The Department of Psychology offers programs of study leading to the PhD degree in three areas of psychology: clinical psychology, social-personality psychology, and developmental psychology. We do not admit students directly for a terminal master's degree; however, PhD students receive a master's degree as a component of their progress through the program. Although each area program is flexible, all doctoral programs are designed to prepare students to conduct research. Faculty expertise covers many topics of research, with significant emphasis on four cross-area signature areas: developmental psychopathology, interpersonal relationships, motivation, and adolescence. Each of these signature areas is represented by faculty from multiples areas (clinical, social-personality, and developmental) and embraces a range of perspectives. For example, the motivation area incorporates two theoretical approaches: self-determination theory and an approach-avoidance model of achievement motivation. The department is associated with Mt. Hope Family Center, which integrates research, training, and treatment in developmental psychopathology with a goal of helping children and families affected by psychosocial adversity (such as maltreatment) and at risk for psychopathology. The department supports students through fellowships, traineeships, and teaching and research assistantships.

Mission Statement and Strategic Goals

The mission of the Department of Psychology is to conduct world-class research on social, clinical, and developmental sciences, with graduate training programs aiming to produce the next generation of psychological scientists. The goal of our programs is to help our students develop into productive scientists and educators in a wide variety of settings. Our clinical psychology program (continuously accredited by the American Psychological Association since 1948 and a member of the Academy of Psychological Clinical Science) follows a clinical science training model. It offers high-quality clinical training in the provision of empirically supported treatments and assessments alongside rigorous research training.

http://www.sas.rochester.edu/psy/

Graduate Faculty Information

Loisa Bennetto, PhD, *University of Denver*
Associate Professor of Psychology
Primary Appointment(s): Psychology

Patrick Davies, PhD, *West Virginia University*
Professor of Psychology
Associate Department Chair
Primary Appointment(s): Psychology

David Dodell-Feder, PhD, *Harvard University*
Assistant Professor of Psychology
Primary Appointment(s): Psychology

Andrew Elliot, PhD, *University of Wisconsin–Madison*
Professor of Psychology
Primary Appointment(s): Psychology

Elizabeth Handley, PhD, *Arizona State University*
Associate Professor of Psychology
Primary Appointment(s): Psychology

Cameron Hecht, PhD, *University of Wisconsin–Madison*
Assistant Professor of Psychology
Primary Appointment(s): Psychology

Isobel Heck, PhD, *University of Chicago*
Assistant Professor of Psychology
Primary Appointment(s): Psychology

Jeremy Jamieson, PhD, *Northeastern University*
Professor of Psychology
Department Chair
Primary Appointment(s): Psychology

Bonnie Le, PhD, *University of Toronto*
Assistant Professor of Psychology
Primary Appointment(s): Psychology

Sarah Mangelsdorf, PhD, *University of Minnesota*
Professor of Psychology
President, University of Rochester; G. Robert Witmer Jr. University Professor
Primary Appointment(s): Psychology

Jennie Noll, PhD, *University of Southern California*
Professor of Psychology
Executive Director, Mt. Hope Family Center
Primary Appointment(s): Psychology

Christie L. M. Petrenko, PhD, *San Diego State University/University of California, San Diego*
Research Associate Professor of Psychology
Primary Appointment(s): Psychology

Harry T. Reis, PhD, *New York University*
Professor of Psychology
Dean's Professor in Arts, Sciences & Engineering
Primary Appointment(s): Psychology

Ronald D. Rogge, PhD, *University of California, Los Angeles*
Associate Professor of Psychology
Primary Appointment(s): Psychology

Karl Rosengren, PhD, *University of Minnesota*
Professor of Psychology, Professor of Brain and Cognitive Sciences
Primary Appointment(s): Psychology, Brain and Cognitive Sciences

Chad Shenk, PhD, *University of Nevada*
Professor of Psychology
Primary Appointment(s): Psychology

Judith G. Smetana, PhD, *University of California, Santa Cruz*
Professor of Psychology
Primary Appointment(s): Psychology

Lisa Starr, PhD, *Stony Brook University*
Associate Professor of Psychology
Primary Appointment(s): Psychology

Melissa Sturge-Apple, PhD, *University of Notre Dame*
Professor of Psychology
Vice Provost and University Dean of Graduate Education
Primary Appointment(s): Psychology

Sheree Toth, PhD, *Case Western Reserve University*
Professor of Psychology
Primary Appointment(s): Psychology

Nestor Tulagan, PhD, *University of California, Irvine*
Assistant Professor of Education, Professor of Psychology
Primary Appointment(s): Warner School of Education and Human Development
Joint Appointment(s): Psychology

Miron Zuckerman, PhD, *Harvard University*
Professor of Psychology
Primary Appointment(s): Psychology

Admissions

Applying to Doctoral Programs

The department accepts only applications for full-time study toward the PhD degree. Faculty within individual programs review applications holistically based on a combination of factors, including research and personal experience, academic record, writing samples, letters of recommendation, and degree of fit between student and faculty interests. The GRE exam is optional and is de-emphasized in admissions. Applicants must identify a prospective mentor at the time of application. We especially encourage applications from groups who have been historically underrepresented in the discipline of psychology.

Academics

Master's Degrees and Requirements

There is no formal terminal master's program in the Department of Psychology; however, PhD programs are designed to confer master's degrees midway through the program. At least 30 semester hours of study are required for the master's degree. Requirements differ by program but typically involve completing a thesis representing independent work and passing a comprehensive examination.

Doctoral Degrees and Requirements

The Department of Psychology offers three doctoral degrees: clinical psychology, social psychology, and developmental psychology. A total of 90 hours of study—60 hours beyond the master's degree—is required. Upon entering the department, students are appointed a faculty member to advise them on course selection and to introduce them to research opportunities. Satisfactory progress through the program depends on completion of both coursework and research requirements. Coursework seeks to provide the broad base of knowledge needed for research, including courses outside the students' areas of specialization. Although the department places strong emphasis on research training, we believe that students should also have teaching experience. All students assist in the teaching of at least one undergraduate course (for example, leading a discussion section, conducting individual tutorials, or assisting in laboratory classes). At the end of their third year, students take the PhD qualifying examination. Passing this exam establishes confirms they have a comprehensive grasp of fundamental knowledge in their major areas and are prepared to undertake dissertation research.

Clinical Psychology

Graduate students in the clinical psychology program receive training in both general and clinical psychology. A sequence of courses provides training in psychometrics, individual differences, psychopathology, cognitive bases of behavior, social bases of behavior, biological bases of behavior, scientific and professional ethics, cultural and ethnic diversity, history and systems of psychology, research design, methodology, and statistics. In addition, graduate students in the clinical psychology program must complete an internship consisting of a minimum of 1,750 hours.

Social-Personality Psychology

The social-personality psychology program provides training for both laboratory and field research. Current research topics include achievement motivation, social cognition, social interaction, interpersonal processes in close relationships, social psychology of health, and emotion. Innovative research and quantitative methods are emphasized. During their first year, students take courses in general social-personality psychology, research methods, and quantitative methods. Students then take more advanced seminars in social-personality psychology and other areas of psychology while receiving training in advanced methodological and quantitative skills. In the third year, students take a comprehensive exam in social-personality psychology before starting their dissertation research.

Developmental Psychology

The developmental psychology program prepares students for careers in research and teaching. Students gain the theoretical perspectives and methodological skills needed for advanced scholarly work. Current research topics include emotion recognition, interparental processes and their effects on children, child and family steps to enhance school preparedness and success, moral development, adolescent-parent relationships, neurocognitive processes in developmental disabilities, development of romantic relationships, and the development and maintenance of resilient outcomes among high-risk children. Opportunities for research are also available at Mt. Hope Family Center and the Children's Institute.

GRADUATE COURSE TITLES

PSYC 465. Achievement Motivation in Developing Countries
PSYC 501. Ethical Issues in Clinical Psychology
PSYC 502. Cognitive Foundations of Behavior
PSYC 504. Data Analysis I
PSYC 510. Research Methods in Social-Personality Psychology
PSYC 513. Meta-Analysis
PSYC 515. Hierarchical Linear Modeling
PSYC 516. Structural Equation Modeling I
PSYC 517. Structural Equation Modeling II
PSYC 518. Statistical Computing with R
PSYC 519. Data Analysis II-General Linear Approaches
PSYC 520. Psychology of Religion
PSYC 530. Subjective Well-Being
PSYC 541. Professional Development in Psychological Science
PSYC 551. Social Cognition
PSYC 553. Seminar in Social Psychology
PSYC 555. Close Relationships
PSYC 557. Affective Bases of Behavior
PSYC 560. Family Processes in Childhood
PSYC 562. Developmental Research Methods
PSYC 563. Adolescent Development
PSYC 565. Early Child Development
PSYC 566. Neurobiological Foundations
PSYC 567. History and Systems of Psychology
PSYC 569. Developmental Theory and Research
PSYC 570. Clinical Assessment I
PSYC 571. Clinical Assessment II
PSYC 572. Introduction to Clinical Research Methods
PSYC 573. Culture and Diversity
PSYC 574. Theoretical and Empirical Foundations of Psychotherapy
PSYC 575. Psychopathology I
PSYC 576. Psychopathology II
PSYC 579. Seminar in Developmental Science
PSYC 582. Practicum in Developmental Psychopathology
PSYC 583. Moral Development
PSYC 584. Psychotherapy Practicum I
PSYC 585. Psychotherapy Practicum II
PSYC 586. Evidence-Based Child Psychotherapy
PSYC 587. Social Psychophysiology
PSYC 591. PhD Readings
PSYC 595. PhD Research
PSYC 595A. PhD Research in Absentia
PSYC 985. Leave of Absence
PSYC 986V. Full-Time Visiting Student
PSYC 987V. Part-Time Visiting Student
PSYC 990. Summer in Residence
PSYC 991. Clinical Internship
PSYC 995. Continuation of Doctoral Enrollment
PSYC 997. Doctoral Dissertation
PSYC 997A. Doctoral Dissertation in Absentia
PSYC 999. Doctoral Dissertation
PSYC 999A. Doctoral Dissertation in Absentia
PSYC 999B. PhD in Absentia Abroad

Susan B. Anthony Institute for Gender, Sexuality, and Women's Studies

Stephanie Dunning
Director
Tanya Bakhmetyeva
Associate Academic Director

Overview

The Susan B. Anthony Institute for Gender, Sexuality, and Women's Studies focuses on the changing cultural, economic, political, and psychological relations among people of all genders and sexualities. Because our discipline asks questions about gender and sexuality that no single academic department is able to answer, the program encourages an interdisciplinary approach to research and learning.

Our program includes faculty from the humanities, natural sciences, and social sciences who are appointed in the School of Arts and Sciences, Eastman School of Music, Warner School of Education, Simon Business School, School of Nursing, and School of Medicine and Dentistry. Areas of faculty interest include:

- History of sexuality
- Women in history
- Society, literature, art, and politics
- Disability, gender, and sexuality
- Queer theory
- Race and ethnicity
- Sexuality and psychology
- Feminism in science, technology, and philosophy
- Gender in literature, art, and media
- LGBTQIA+ studies

Susan B. Anthony Institute research grants, graduate teaching fellowships, and graduate dissertation fellowships support the ongoing research and curricular development of our faculty and students. Each year, the institute awards the Janet Heidinger Kafka Prize for excellence in fiction by an American woman. Past recipients include Gail Godwin, Mary Gordon, Ursula LeGuin, Toni Morrison, Marianne Wiggins, and Karen Tei Yamashita.

The Susan B. Anthony Institute supports the research and curricular development of graduate students whose work focuses on gender, sexuality, and women's studies. Graduate students:

- Participate in faculty research seminars, graduate reading groups, and graduate pedagogy discussion groups
- Organize the annual graduate student conference in gender, sexuality, and women's studies

Over 100 graduate students from across the University of Rochester are affiliated with the institute.

https://www.sas.rochester.edu/gsw/

Graduate Faculty

Michael Alan Anderson, PhD, *University of Chicago*
Professor of Musicology
Chair, Musicology Department
Primary Appointment(s): Musicology (ESM)
Affiliation: Susan B. Anthony Institute

Tanya Bakhmetyeva, PhD, *University of Rochester*
Associate Professor
Associate Academic Director, Susan B. Anthony Institute for Gender, Sexuality, and Women's Studies; Associate Director, Humanities Center
Primary Appointment(s): Susan B. Anthony Institute

Sylvie Beaudette, DMA, *University of Rochester*
Assistant Professor of Chamber Music
Director, Summer@Eastman
Primary Appointment(s): Chamber Music (ESM)
Affiliation: Susan B. Anthony Institute

Joanne Bernardi, PhD, *Columbia University*
Professor of Japanese and Visual and Cultural Studies
Head, Japanese Program
Primary Appointment(s): Modern Languages and Cultures
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

David Bleich, PhD, *New York University*
Professor of English
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute

Catherine Cerulli, JD, *SUNY Buffalo; PhD, SUNY Albany*
Professor of Psychiatry
Director, Susan B. Anthony Center for Women's Leadership
Primary Appointment(s): Psychiatry (SMD)
Affiliation: Susan B. Anthony Institute

Shin-yi Chao, PhD, *University of British Columbia*
Associate Professor of Religion
Primary Appointment(s): Religion and Classics
Affiliation: Susan B. Anthony Institute

Nancy Chin, PhD, *University of Rochester;* MPH, *University of Rochester*
Associate Professor of Community and Preventive Medicine
Joint Appointment(s): Public Health Sciences (SMD) and Center for Community Health and Prevention (SMD)
Affiliation: Susan B. Anthony Institute

Elizabeth Colantoni, PhD, *University of Michigan*
Associate Professor of Classics
Primary Appointment(s): Religion and Classics
Affiliation: Susan B. Anthony Institute

Mary Jane Curry, PhD, *University of Wisconsin–Madison*
Associate Professor of Teaching and Curriculum
Primary Appointment(s): Teaching and Curriculum (Warner)
Affiliation: Susan B. Anthony Institute

Thomas C. Devaney, PhD, *Brown University*
Associate Professor of History
Associate Dean, School of Arts & Sciences
Primary Appointment(s): History
Affiliation: Susan B. Anthony Institute

Kristin Doughty, PhD, *University of Pennsylvania*
Associate Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Stefanie Dunning, PhD, *University of California*
Professor
Director, Susan B. Anthony Institute
Primary Appointment(s): Susan B. Anthony Institute
Affiliation: Frederick Douglass Institute, English

Marie-Joelle Estrada, PhD, *Duke University*
Associate Professor of Instruction in Psychology
Primary Appointment(s): Psychology
Affiliation: Susan B. Anthony Institute

Roger Freitas, PhD, *Yale University*
Professor of Musicology
Primary Appointment(s): Musicology (ESM)
Affiliation: Susan B. Anthony Institute

Thomas P. Gibson, PhD, *London School of Economics*
Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Susan B. Anthony Institute

Susan Gustafson, PhD, *Stanford University*
Professor of Modern Languages and Cultures
Karl F. and Berth A. Fuchs Professor of German Studies; Director, Literary Translation Studies Program
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Thomas Hahn, *University of California, Los Angeles*
Professor of English
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute

Rachel Haidu, PhD, *Columbia University*
Associate Professor of Art History
Primary Appointment(s): Art and Art History
Affiliation: Susan B. Anthony Institute

Sarah Higley, PhD, *University of California, Berkeley*
Rank: Professor of English
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute, Film and Media Studies

June J. Hwang, PhD, *University of California, Berkeley*
Associate Professor of German
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Rosemary Kegl, PhD, *Cornell University*
Associate Professor of English
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute

Cilas Kemedjio, PhD, *The Ohio State University*
Professor of French
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Jennifer Kyker, PhD, *University of Pennsylvania*
Associate Professor of Music (A&S), Associate Professor of Ethnomusicology (ESM)
Primary Appointment(s): Music (A&S), Musicology (ESM)
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Bette London, *University of California, Berkeley*
Professor of English
Primary Appointment(s): English
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Katherine Mannheimer, PhD, *Yale University*
Associate Professor of English
Chair, Department of English
Primary Appointment(s): English
Affiliation: Susan B. Anthony Institute

Kathryn Mariner, PhD, *University of Chicago*
Associate Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Frederick Douglass Institute, Susan B. Anthony Institute

Joyce M. McDonough, *University of Massachusetts Amherst*
Professor of Linguistics
Richard L. Turner Professor
Primary Appointment(s): Linguistics
Affiliation: Susan B. Anthony Institute

Honey Meconi, PhD, *Harvard University*
Professor of Musicology
Arthur Satz Professor of Music for the Department of Music (A&S)
Primary Appointment(s): Music (A&S), Musicology (ESM)
Affiliation: Susan B. Anthony Institute

Anne Merideth, PhD, *Princeton University*
Professor of Instruction, Religion
Director, Undergraduate Studies in Religion and Classics
Primary Appointment(s): Religion and Classics
Affiliation: Susan B. Anthony Institute

John Michael, PhD, *Johns Hopkins University*
Professor of English, Professor of Visual and Cultural Studies
John Hall Deane Professor of Rhetoric and Poetry; Director, American Studies
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Frederick Douglass Institute, Literary Translation Studies, Susan B. Anthony Institute

Karen M. Mustian, PhD, *University of North Carolina at Greensboro; MPH, University of Rochester*
Professor
Dean's Professorship in Surgery
Joint Appointment(s): Surgery (SMD), Cancer Center (SMD), Radiation Oncology (SMD)
Affiliation: Susan B. Anthony Institute

John Osburg, PhD, *University of Chicago*
Associate Professor of Anthropology
Chair, Anthropology
Primary Appointment(s): Anthropology
Affiliation: Susan B. Anthony Institute

Jean Pedersen, PhD, *University of Chicago*
Professor of History; Professor of Humanities, Eastman School of Music
Primary Appointment(s): Department of Humanities (ESM)
Joint Appointment(s): History
Affiliation: Susan B. Anthony Institute

Ryan Prendergast, PhD, *Emory University*
Associate Professor of Spanish
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Raúl Rodríguez-Hernández, PhD, *Cornell University*
Associate Professor of Spanish
Primary Appointment: Modern Languages and Cultures
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Nora Rubel, PhD, *University of North Carolina at Chapel Hill*
Associate Professor of Religion and Classics
Jane and Alan Batkin Professor in Jewish Studies; Chair, Religion and Classics
Primary Appointment(s): Religion and Classics
Affiliation: Susan B. Anthony Institute

Joan S. Rubin, PhD, *Yale University*
Professor of History
Dexter Perkins Professor in History
Primary Appointment(s): History
Affiliation: Susan B. Anthony Institute

Jeffrey T. Runner, PhD, *University of Massachusetts Amherst*
Professor of Linguistics, Professor of Brain and Cognitive Sciences
Primary Appointment(s): Linguistics
Joint Appointment(s): Brain and Cognitive Sciences
Affiliation: Susan B. Anthony Institute

Claudia Schaefer, PhD, *Washington University in St. Louis*
Professor of Spanish and Comparative Literature, Professor of Film and Media Studies
Rush Rhees Chair
Primary Appointment(s): Modern Languages and Cultures
Affiliation: Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Joanna Scott, MA, *Brown University*
Professor of English
Roswell Smith Burrows Professor of English; Director, Literary Arts Programs
Primary Appointment(s): English
Affiliation: Literary Translation Studies, Susan B. Anthony Institute

Llerena G. Searle, PhD, *University of Pennsylvania*
Associate Professor of Anthropology
Primary Appointment(s): Anthropology
Affiliation: Susan B. Anthony Institute

Grace Seiberling, PhD, *Yale University*
Associate Professor of Art History
Primary Appointment(s): Art and Art History
Affiliation: Susan B. Anthony Institute

Reinhild Steingröver, PhD, *University at Buffalo*
Professor of German (ESM)
Director, Faculty Development (ESM)
Primary Appointment(s): Humanities (ESM)
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Allen Topolski, MFA, *Pennsylvania State University*
Associate Professor of Art and Art History
Chair, Art and Art History
Primary Appointment(s): Art and Art History
Affiliation: Susan B. Anthony Institute, Film and Media Studies

Sharon Willis, PhD, *Cornell University*
Professor of Art and Art History, Professor of Visual and Cultural Studies
Fanny Knapp Allen Professor of Fine Arts
Primary Appointment(s): Art and Art History
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Frederick Douglass Institute, Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Admissions

Applying to Advanced Certificates

Requirements for Certificate

- Complete and submit a certificate plan application. Although this is required only for non-matriculated students, we recommend all students complete this step to ensure their plan will fulfill the requirements of the certificate before they complete their courses.
- Complete and submit the final graduate certificate application.
- Certificate plan applications and final certificate applications are accepted on a rolling basis. If you wish to receive the award during our commencement ceremony in May, please submit your completed application no later than March 1 of that year. Please email all completed materials in a single PDF file to sbai@rochester.edu.

Academics

Advanced Certificates and Requirements

The Susan B. Anthony Institute for Gender, Sexuality, and Women's Studies offers a formal graduate certificate in gender, sexuality, and women's studies for students who are enrolled in a graduate degree (master's or PhD) program at the University of Rochester and for non-matriculated students who complete four or more courses from at least two University of Rochester graduate programs. Programs of study are developed in consultation with an advisor from the curriculum committee. That advisor mentors or arranges mentorship for each graduate student, helping them choose relevant classes and make sure that their program of study is cohesive. Students must successfully complete four graduate-level courses in gender, sexuality, and women's studies. The courses must be drawn from at least two departments or programs at the University of Rochester and must include at least two courses considered methodological and theoretical approaches and two courses considered applied courses. Successful completion of the courses is determined by the departments or programs through which the courses are offered.

GRADUATE COURSE TITLES

These courses are offered with a GSWS prefix code. Many additional courses are offered in departments across Arts, Sciences & Engineering, Eastman, School of Medicine, School of Nursing, and Warner.

GSWS 400. History of Feminism: Colloquium
GSWS 404. Feminist Film Theory
GSWS 406. Global Politics of Gender and Health
GSWS 407. Carnal Speaking: Discourse and the Body in Medieval English Literature
GSWS 416. Restoration and 18th-Century Drama
GSWS 423. Madness, Marriage, Monstrosity
GSWS 425. Women, Cloth, Culture
GSWS 444. Mutilated Bodies: From Traditions
GSWS 442. Major Authors: The Brontes
GSWS 446. Jane Austen and Her Contemporaries
GSWS 453. Gender and Language in Literature, Film, and Society
GSWS 454. The Monstrous Feminine
GSWS 456. Spanish American Women Writers
GSWS 458. Women's Lives and Letters, America 1830–1880
GSWS 459. Reproduction in the US
GSWS 467. Changing Genres of Erotica
GSWS 472. Gender and Sexuality in the 20th Century
GSWS 473. Sex and Gender in the American City
GSWS 480. Intersectionality: History of an Idea
GSWS 483. Orality, Language, and Literacy
GSWS 488. Language in Science and Religion
GSWS 489. Problems of Western Civilization
GSWS 496. International Human Rights
GSWS 522. Black Feminist Criticism and Theory

Visual and Cultural Studies

Anna Rosensweig
Program Director

Overview

An interdisciplinary program in Visual and Cultural Studies at the University of Rochester, this is one of the few programs in the country that offer graduate degrees with an emphasis on art, media, and film theory, criticism, and cultural studies. Students can earn a doctoral degree by doing intensive work in several of Rochester's humanities departments. Primary faculty for the Visual and Cultural Studies program teach in the Departments of Art and Art History, Anthropology, English, and Modern Languages and Cultures, and at the Eastman School of Music. Students may also take courses from other departments, such as history or education, as part of their studies. The program stresses close interpretation of art, film, and media within social and historical frameworks. Students are able to relate recent developments in literary and cultural theory to visual works and to investigate the relationships between critical texts and visual culture. The graduate program encourages students not only to gain detailed knowledge about their chosen field, but also to develop critical analytical skills. Students explore culture in its social and historical context, and employ a variety of critical methods and perspectives.

Mission Statement

Visual and Cultural Studies is distinctive in that it offers students an opportunity to construct a program of coursework and research expressly tailored to their individual interests. Students are encouraged to take courses that expose them to both unfamiliar forms of visual objects and new methods for defining and interpreting these forms. It is this maximal creative freedom that has enabled VCS students to produce original and innovative dissertation research that incorporates multiple disciplinary perspectives and analytical approaches.

The program also provides several practice-based opportunities for students to develop professional skills for both academic and "alt-academic" jobs. VCS students serve as TAs in a range of courses offered by VCS core faculty and faculty affiliates. In addition, VCS students regularly teach stand-alone courses for both the Frederick Douglass Institute and the Susan B. Anthony Institute, effectively sustaining crucial but under-resourced interdepartmental programs that advance the University's commitment to diversity, equity, and inclusion.

VCS students are entirely responsible for running the highly successful online journal InVisible Culture, one of the first open access journals in the field of visual culture. InVisible Culture gives students experience in designing, editing, and marketing a professional publication. Similarly, VCS students manage the Hartnett Gallery on the River Campus, a multifaceted curatorial experience valuable for careers in museum and gallery settings. Every other year, VCS students acquire experience in planning, organizing, and hosting a professional conference. Students also gain practical experience curating a film festival with the annual VCS series OnFilm.

VCS offers forward-looking opportunities to develop skills that help students pursue a broad and diverse range of career options, key for navigating difficult job markets within and outside of academia. VCS graduates have compiled an excellent record of placement in both academic and alt-academic positions over the life of the program.

Strategic Goals

The program aspires to sustain and greatly expand its commitment to the study of non-Western visual culture, in particular East Asian visual culture, and of Indigenous, Black and Latinx artists, filmmakers, and visual culture creators in the United States.

The program also sustains a longstanding commitment to sexuality studies in relation to visual culture. VCS is known for its bold leadership in the field of queer theory.

The program fosters an increasing interest among VCS students for acquiring digital and data literacies and bringing humanistic perspectives and skills to bear upon the development and use of new digital tools.

https://www.sas.rochester.edu/vcs/

Graduate Faculty Information

Joanne Bernardi, PhD, *Columbia University*
- Professor of Japanese, Professor of Visual and Cultural Studies
- Head, Japanese Program
- Primary Appointment(s): Modern Languages and Cultures
- Joint Appointment(s): Graduate Program in Visual and Cultural Studies
- Affiliation: Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Joel Burges , PhD, *Stanford University*
- Associate Professor of English, Associate Professor of Visual and Cultural Studies
- Primary Appointment(s): English
- Joint Appointment(s): Graduate Program in Visual and Cultural Studies
- Affiliation: Film and Media Studies

Robert J. Foster, PhD, *University of Chicago*
- Professor of Anthropology, Professor of Visual and Cultural Studies
- Richard L. Turner Professor of Humanities
- Primary Appointment(s): Anthropology
- Joint Appointment(s): Graduate Program in Visual and Cultural Studies

Christopher P. Heuer, PhD, *University of California, Berkeley*
Professor of Art History, Professor of Visual and Cultural Studies
Primary Appointment(s): Art and Art History
Joint Appointment(s): Graduate Program in Visual and Cultural Studies

John Michael, PhD, *Johns Hopkins University*
Professor of English, Professor of Visual and Cultural Studies
John Hall Deane Professor of Rhetoric and Poetry; Director, American Studies
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Frederick Douglass Institute, Literary Translation Studies, Susan B. Anthony Institute

Jason Middleton, PhD, *Duke University*
Associate Professor of English, Associate Professor of Visual and Cultural Studies
Director, Film and Media Studies Program
Primary Appointment(s): English
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Film and Media Studies

Anna Rosensweig, PhD, *University of Minnesota*
Associate Professor of French, Associate Professor of Visual and Cultural Studies
Director, Graduate Program in Visual and Cultural Studies
Primary Appointment(s): Modern Languages and Cultures
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Literary Translation Studies

Sharon Willis, PhD, *Cornell University*
Professor of Art and Art History, Professor of Visual and Cultural Studies
Fanny Knapp Allen Professor of Fine Arts
Primary Appointment(s): Art and Art History
Joint Appointment(s): Graduate Program in Visual and Cultural Studies
Affiliation: Frederick Douglass Institute, Literary Translation Studies, Susan B. Anthony Institute, Film and Media Studies

Admissions

Applying to Doctoral Programs

The program enrolls five to seven graduate students each year, and all successful applicants receive full tuition remission and a stipend for five years.

Required Application Materials

- Online application
- A statement of purpose (1–3 pages, single-spaced)
- Three letters of recommendation
- Official undergraduate and graduate transcripts
- A 15- to 20-page writing sample (for example: seminar paper, thesis chapter, published article)
- GRE scores (optional)
- International students must also supply TOEFL, TOEFL iBT at Home, IELTS, or Duolingo scores.

Academics

Master's Degrees and Requirements

Students are normally admitted to the VCS program only for the PhD. However, in some circumstances, students will earn a terminal master's degree. For the master's degree, students take 40 credit hours of study (usually 10 courses), as follows:

- The Colloquium in Visual and Cultural Studies
- Three core courses in critical theory
- Three core courses in visual studies
- Three electives

In some circumstances, students will be permitted to work toward the master's degree by taking 30 credit hours of study (seven or eight courses) and writing a thesis. In this case, the breakdown of courses is:

- The Colloquium in Visual and Cultural Studies
- Two or three core courses in critical theory
- Two or three core courses in visual studies
- One or two electives
- Master's thesis

Doctoral Degrees and Requirements

Students pursuing a doctoral degree in visual and cultural studies are required to fulfill 90 credit hours of study, including 60 credit hours of coursework (normally 15 classes) and 30 credit hours in PhD research. Coursework is composed of:

- The Colloquium in Visual and Cultural Studies (required for first-year students)
- Four core courses in critical theory
- Four core courses in visual studies
- Six electives

Students are required to take a language examination, usually in a language that will be relevant to their research, and it must be successfully completed before the qualifying examination.

After completing the 90 credit hours of study, students take the qualifying examination. Under the supervision of a faculty committee (two from the VCS program and at least one from outside the program), students prepare for their qualifying exam.

Preparation includes:

- An outline of their dissertation project, a summary of what will be covered, and a description of each chapter
- A comprehensive bibliography, divided into sections representing the main body of literature that has informed the student's thinking
- A draft chapter of the dissertation

The student then meets with the faculty committee to discuss the dissertation project, previous coursework, and general reading. Following the completion of the exam, the student presents the work to the other graduate students in a special seminar.

GRADUATE COURSE TITLES

As VCS is an interdisciplinary program, we do not offer our own courses beyond the VCS Colloquium. Below are course titles accepted as part of the VCS curriculum in recent years.

AHST 583. VCS Colloquium (required for first-year students)
AHST 440. African American Cinema and Its Contexts
ENGL 425. American Renaissance
AHST 456. Arctic Vision
AHST 408. Cities of the World: Babylon to Brasilia
AHST 561. Classical Film Theory
ANTH 457. Contemporary Chinese Society
ENGL 448. Contemporary Women's Writing
ENGL 465. Documentary Film and Media
CLTR 430. Film as Object
ENGL 504. Forest and City: Enclosing "Nature" in Medieval Literature
ENGL 429. Ideas of America
AHST 459. Islamic Textiles: Society, Economy, Politics
ENGL 406. Magic Language
ENGL 438. Making Modernism New Again
CLTR 412. Monsters, Ghosts, and Aliens
MUY 580. Music in the United States since WWII
CLTR 421. Mutilated Bodies: From Traditions to Cutting-Edge Technologies
AHST 475. Paper and Death/Critical Paper
MHS 594. Performing the Belle Époque
CLTR 442A. Poe and Hoffman
AHST 415. Seminar on Contemporary Art: Museums
ENGL 408. Renaissance Drama
CLTR 438. Revolutions and Revolt
CLTR 414N. Tourist Japan
AHST 539. Transition!Art

W. Allen Wallis Institute of Political Economy

Lawrence Rothenberg
Director

Overview

The Wallis Institute supports graduate training in political economy for students in the Department of Economics and the Department of Political Science, both in the School of Arts & Sciences. In addition to course offerings, the Wallis Institute runs a seminar series that allows Rochester faculty and students to present their work, and it brings in top researchers across the field from other departments. The institute sponsors postdocs and other visitors and encourages interaction with graduate students. Also, the institute finds a small grant program for students to work with faculty members conducting applied, empirical research. Finally, students are invited to attend an annual conference organized by the institute that continues to serve as a focal point of the political economy field.

http://www.wallis.rochester.edu

Graduate Faculty Information

Dan Alexander, PhD, *University of Chicago*
Assistant Professor of Political Science
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Paulo Barelli, PhD, *Columbia University*
Associate Professor of Economics
Associate Chair, Department of Economics
Primary Appointment(s): Economics
Affiliation: Wallis Institute

John Duggan, PhD, *California Institute of Technology*
Professor of Political Science, Professor of Economics
Don Alonzo Watson Professor of Political Sciences
Primary Appointment(s): Political Science
Joint Appointment(s): Economics
Affiliation: Wallis Institute

Mark Fey, PhD, *California Institute of Technology*
Professor of Political Science
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Anderson Frey, PhD, *University of British Columbia*
Assistant Professor of Political Science
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Tasos Kalandrakis, PhD, *University of California, Los Angeles*
Professor of Political Science and Professor of Economics
Primary Appointment(s): Political Science
Joint Appointment(s): Economics
Affiliation: Wallis Institute

Asen Kochov, PhD, *University of Rochester*
Associate Professor of Economics
Primary Appointment(s): Economics
Affiliation: Wallis Institute

Sergio Montero, PhD, *California Institute of Technology*
Assistant Professor of Political Science and Assistant Professor of Economics
Primary Appointment(s): Political Science
Joint Appointment(s): Economics
Affiliation: Wallis Institute

Lawrence Rothenberg, PhD, *Stanford University*
Professor of Political Science
Corrigan-Minehan Professor of Political Science; Director, W. Allen Wallis Institute of Political Economy
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Randall Stone, PhD, *Harvard University*
Professor of Political Science
Director, Skalny Center for Polish and Central European Studies
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Scott Tyson, PhD, *New York University*
Associate Professor of Political Science
Primary Appointment(s): Political Science
Affiliation: Wallis Institute

Admissions

Applying to Doctoral Programs

Prospective students who seek to specialize in this area should apply to the PhD program in either Economics or Political Science.

Academics

Doctoral Degrees and Requirements

Students admitted to the Economics or Political Science program are subject to the requirements of their program, and they may choose to take advanced graduate seminars in political economy. The Wallis Institute provides a two-course sequence in political economy taught by the faculty from the parent departments. Students in economics may take the sequence and write a qualifying exam to fulfill the requirements for the political economy field, and students in political science may take the sequence as part of the requirements for the formal political theory field.

The first course in political economy sequence typically emphasizes foundational theory, especially connections to the theory of social choice. The goal of the course is to give students in political economy a firm theoretical grounding for their work. The second course may cover a range of topics from elections to legislative policy and makes use of methods from formal modeling, computational analysis, or empirical analysis.

GRADUATE COURSE TITLES

PEC 575. Political Economy I
PEC 582. Political Economy II

Writing, Speaking, and Argument Program

Deb Rossen-Knill
Executive Director

Overview

The Writing, Speaking, and Argument Program leads the effort to familiarize students with key principles and strategies for becoming successful academic communicators across different modes and contexts. In concert with faculty, the Writing, Speaking, and Argument Program builds a strong community of undergraduate and graduate writers, speakers, and researchers. Our program fosters a culture of open, honest, and critical communication. Program courses and tutoring help students develop awareness of language practices—their own, others', and those of specialized discourse communities—so that they might make informed, purposeful, and effective choices as academic communicators.

WSAP's Graduate Writing Project (GWP) supports graduate students from AS&E at any stage in their program, working on any kind of academic writing and research, from abstracts and article submissions to theses and dissertations. We offer a range of services designed for graduate-student writers at the University, including writing groups, retreats, workshops, and tutoring.

WSAP has several renewable teaching fellowships for graduate students interested in designing their own version of WRT 105: Reasoning and Writing in the College, a theme-based, first-year writing course. All instructors accepted into our program teach one section of WRT 105 in fall and the same course in spring and attend the program orientation at the end of August. The minimum commitment for this position is two years; however, successful performance is required for reappointment after the first year.

Additionally, WSAP hires graduate students from a variety of disciplines to become writing consultants. They tutor undergraduate and graduate student writers.

Mission Statement and Strategic Goals

Our mission is to help students develop as academic communicators in ways that honor their linguistic backgrounds and identities. To that end, we value linguistic diversity and the distinct identities reflected in the multitude of Englishes and other languages across the world. We recognize that effective communication involves a negotiation between individual and community identities, goals, and ways of communicating.

WSAP is committed to building a diverse, equitable, and inclusive community. We recognize the history of exclusion and racism upon which the University of Rochester was built and acknowledge the harm these histories cause. We aim to foster a community in which all know that they belong: all are invited to speak, and all know that they are heard. This plurality of voices is essential to the success of our program and to the larger academic community at the University of Rochester and beyond.

https://writing.rochester.edu

Graduate Faculty Information

Amy Arbogast, PhD, *University of Rochester*
Associate Professor of Writing
Coordinator of Speaking Center
Primary Appointment(s): Writing, Speaking, and Argument Program

Solveiga Armoskaite, PhD, *University of British Columbia*
Assistant Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Matthew Bayne, PhD, *University of Rochester*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Justin Coyne, PhD, *University of Rochester*
Assistant Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Whitney Gegg-Harrison, PhD, *University of Rochester*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Dustin Hannum, PhD, *University of Rochester*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Karl Mohn, PhD, *University of Georgia*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Rachel O'Donnell, PhD, *York University*
Assistant Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Kate Phillips, PhD, *University of Rochester*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Deborah Rossen-Knill, PhD, *University of Minnesota; MFA, University of Michigan*
Professor of Writing

Executive Director, Writing, Speaking, and Argument Program
Primary Appointment(s): Writing, Speaking, and Argument Program

Katherine Schaefer, PhD, *Carnegie Mellon University*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Catherine Schmied Towsley, EdD, *University of Rochester*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Adam Stauffer, PhD, *University of Rochester*
Assistant Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program

Stefanie Sydelnik, PhD, *University of Rochester*
Associate Professor of Writing
Associate Director, Writing, Speaking, and Argument Program
Primary Appointment(s): Writing, Speaking, and Argument Program

Liz Tinelli, PhD, *University of Rochester*
Associate Professor of Writing
Coordinator, Graduate Writing Project
Primary Appointment(s): Writing, Speaking, and Argument Program

Stella Wang, PhD, *University of Rochester*
Associate Professor of Writing
Primary Appointment(s): Writing, Speaking, and Argument Program
Affiliation: Literary Translation Studies

Admissions

WSAP does not offer graduate programs. However, it does offer courses for students enrolled in University graduate programs.

Academics

Graduate degrees are not offered through the program, but WSAP offers some courses to graduate students, listed below. Please check with WSAP for information on other classes that may be open to graduate students.

GRADUATE COURSE TITLES

WSAP 451. The Rhetorical Sentence
WSAP 571. Practicum in Teaching of Writing
WSAP 572. Practicum in Teaching of Writing

Hajim School of Engineering & Applied

Administrative Officers

Wendi Heinzelman
Dean

Nick Vamivakas
Dean of Graduate Education and Postdoctoral Affairs

Kristina Lantzky-Eaton
Assistant Dean of Graduate Education and Postdoctoral Affairs

Committee on Graduate Studies

Mark Buckley
Biomedical Engineering

Greg Gdowski
Biomedical Engineering—CMTI

Alex Shestopalov
Chemical Engineering

Dan Gildea
Computer Science

Michael Heilemann and Gonzalo Mateos
Electrical and Computer Engineering

John Lambropoulos
Mechanical Engineering

Bradley Nilsson
Materials Science

Jennifer Kruschwitz and Gary Wicks
The Institute of Optics

School Mission Statement

The mission of the Edmund A. Hajim School of Engineering & Applied Sciences is:

- To promote and support the highest-quality research that advances solutions to pressing societal problems
- To advance education in engineering and applied science through engaging experiences and environments that promote critical thinking, creativity, equity, ethics, and leadership, creating lifelong learners.

School-Level Graduate Awards

- Hajim School of Engineering and Applied Sciences Dean's Fellowship
- LLE: High Energy Physics (HEDP) Minority Scholarship
- LLE: Horton Fellowships
- Robert Jyr Chen Fellowship
- Donald M. and Janet C. Barnard Fellowship
- Outstanding Dissertation Awards

Biomedical Engineering

Stephen McAleavey
Chair

Mark Buckley
Director of Graduate Studies

Greg Gdowski
Director of Graduate Studies, CMTI

Overview

Affiliated with both the Hajim School of Engineering and Applied Sciences and the School of Medicine and Dentistry, the University of Rochester graduate program in Biomedical Engineering emphasizes the application of engineering skills to biomedical problem-solving at both the master's and doctoral levels. In addition, the Center for Medical Technology and Innovation (CMTI) offers a one-year MS in Biomedical Engineering degree with specialized training in medical device design. With access to over 40 laboratories on the River Campus, Medical Center, and Strong Memorial Hospital, students can tailor their own interdisciplinary research experience. The program offers state-of-the-art dedicated training laboratories, close individual attention and faculty mentoring, and a welcoming learning community where you will find great friends and future colleagues. Students who are interested in the department can also participate in the Biomedical Engineering Graduate Student Council.

Mission Statement and Strategic Goals

Our mission is to discover, create, and educate in order to engineer ever-better solutions in biomedical research and health care. Our vision is to build a collaborative, diverse community dedicated to excellence in biomedical engineering research, education, and innovation.

http://www.bme.rochester.edu

Graduate Faculty Information

Edward Brown, PhD, *Cornell University*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Neuroscience and James P. Wilmot Cancer Center

Mark Buckley, PhD, *Cornell University*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Center for Visual Science and Center for Musculoskeletal Research
Affiliation: Materials Science

Laurel Carney, PhD, *University of Wisconsin*
Professor of Biomedical Engineering
Marylou Ingram Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Neuroscience

Ben Castaneda, PhD, *University of Rochester*
Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Electrical and Computer Engineering

Regine Choe, PhD, *University of Pennsylvania*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Electrical and Computer Engineering

Diane Dalecki, PhD, *University of Rochester*
Professor of Biomedical Engineering
Distinguished Professor of Biomedical Engineering; Director, Rochester Center for Biomedical Ultrasound
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Electrical and Computer Engineering

Greg Gdowski, PhD, *Boston University*
Professor of Biomedical Engineering
Executive Director, Center for Medical Technology and Innovation
Primary Appointment(s): Biomedical Engineering

Michael Giacomelli, PhD, *Duke University*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering

Marisol Herrera-Perez, PhD, *Purdue University*
Assistant Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering

Cherice Hill, PhD, *Virginia Polytechnic Institute and State University*
Assistant Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering

Rebecca Irwin, PhD, *Cornell University*
Assistant Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering

Edmund Lalor, PhD, *University College Dublin*
Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Neuroscience

Whasil Lee, PhD, *Duke University*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Pharmacology and Physics

Amy L. Lerner, PhD, *University of Michigan*
Associate Professor of Biomedical Engineering, Associate Professor of Mechanical Engineering
Academic Director, Center for Medical Technology and Innovation
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Center for Musculoskeletal Research

Anne Luebke, PhD, *Johns Hopkins University*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Neuroscience

Stephen McAleavey, PhD, *University of Rochester*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Electrical and Computer Engineering

James McGrath, PhD, *Harvard University and Massachusetts Institute of Technology*
Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Affiliation: Materials Science

Jong Hoon Nam, PhD, *Virginia Tech*
Associate Professor of Biomedical Engineering, Associate Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Admissions

Applying to Doctoral Programs

The program is designed for students who have a bachelor's degree in engineering, applied physics, or related fields. The undergraduate curriculum should include courses in calculus through differential equations, chemistry, and physics, as well as in-depth training in engineering or the physical sciences. Some formal training in the biological sciences is also desirable. Students who do not have the required background in engineering or the physical sciences may be admitted to the program, but may need to take additional coursework, typically during the first year of study. Students for whom English is not a native language are strongly urged to come to Rochester early, in order to prepare for the first-year program.

In addition to completing the online application and personal statement, the following materials must be uploaded with the application:

- Three letters of recommendation
- Official transcripts (minimum GPA is 3.0)
- Curriculum vitae
- Optional GRE
- TOEFL (or IELTS) test scores should be uploaded to the application and official copies should be mailed to the University for verification
- Other than test scores, documents that are uploaded do not need to be mailed to the department.

Applying to Master's Programs

MS applications are reviewed on a rolling basis. The program is designed for students who have a bachelor's degree in engineering, applied physics, or related fields. The undergraduate curriculum should include courses in calculus through differential equations, chemistry, and physics, as well as in-depth training in engineering or the physical sciences. Some formal training in the biological sciences is also desirable. Students who do not have the required background in engineering or the physical sciences may be admitted to the program, but may need to take additional coursework, typically during the first year of study. Students for whom English is not a native language are strongly urged to come to Rochester early, in order to prepare for the first-year program.

In addition to completing the online application and personal statement, the following materials must be uploaded with the application:

- Three letters of recommendation
- Official transcripts (minimum GPA is 3.0)
- Curriculum vitae
- Optional Graduate Record Examination
- TOEFL (or IELTS) test scores should be uploaded to the application and official copies should be mailed to the University for verification
- Other than test scores, documents that are uploaded do not need to be mailed to the department

Academics

Master's Degrees and Requirements

Master of Science in Biomedical Engineering
All master's degrees require at least 30 credits, and more than 21 of these credits must come from engineering-prefixed coursework.

Plan A, Thesis Option: Courses are taken both in support of a research project and to broaden the student's educational experience. Plan A is centered on the successful execution and communication of an in-depth research project. The option requires a thesis defense.

- BME core coursework (4 credits)
- Additional coursework (15 credits minimum)
- Research (6-11 credits)

Plan B, Coursework Option: Plan B focuses on developing an advanced understanding of biomedical engineering principles. Courses are selected to provide depth in an area of the student's interest and to develop an understanding of the breadth of applications in biomedical engineering. This option requires an exit exam.

- BME core coursework (4 credits)
- Additional required coursework (20 credits minimum)
- Research (6 credits maximum)

CMTI specialization in medical technology and innovation: Students will enroll for 30 credit hours during the academic year. This program is part of the Plan B, with a coursework structure.

- Core curriculum (16 credits)
- Elective courses

Doctoral Degrees and Requirements

PhD in Biomedical Engineering

We strongly recommend that PhD students complete 30 credit hours by the end of their first year in the program. For a doctoral degree, the University requires completion of 90 credit hours. The number of non-research course credits needed to meet the minimum BME PhD requirements is 41. The remaining 49 credits, if not earned through additional coursework, will be earned as research.

Curricular requirements for the PhD degree:

- BME core (14 credits)
- Additional requirements (27 credits)

GRADUATE COURSE TITLES

BME 402. Research Methods
BME 404. Computational Methods Applied to Biological Systems
BME 406. Technical Computing in BME
BME 410. Introduction to Augmented and Virtual Reality
BME 411. Cell & Molecular Biology Foundations
BME 412. Viscoelasticity in Bio Tissues
BME 413. Selected Topics in Augmented and Virtual Reality
BME 414. Biomed Printed Circuit Board Design & Prototyping
BME 415. Neuroprosthetics
BME 417. Neuroscience of Neuroprosthetic Devices
BME 418. Introduction to Neuroengineering
BME 425. Human Neurophysical Measurement
BME 428. Physiological Control Systems
BME 429. Applied Nanoscience and Nano-engineering
BME 431. FDA and Intellectual Property
BME 432. FDA and Commercialization
BME 438. Introduction to Quality Engineering
BME 442. Microbiomechanics
BME 451. Biomedical Ultrasound
BME 452. Medical Imaging – Theory & Implementation
BME 453. Ultrasound Imaging
BME 455. Translational Biomedical Optics
BME 459. Applied Human Anatomy
BME 460. Quantitative Physiology
BME 462. Cell and Tissue Engineering
BME 465. Introduction to Cell Mechanics and Mechanobiology
BME 467. Models and Simulations of BME Systems
BME 468. Introduction to Structure and Analysis of Biomolecules
BME 472. Advanced Biomedical Microscopy
BME 474. Biomedical Sensors, Circuits and Instruments
BME 483. Biosolid Mechanics
BME 486. Finite Element Methods
BME 487. Nonlinear Finite Elements Analysis
BME 491. Master's Reading in BME
BME 492. Neuroenhancement & Rehabilitation Engineering
BME 493. Master's Essay
BME 494. Master's Internship
BME 495. Master's Research in BME
BME 496. Current Research Seminars
BME 498. CMTI Summer Rotation
BME 501. Practicum in Augmented and Virtual Reality
BME 513. MR Imaging: Spins to Brains
BME 515. Neural Cortical Movement
BME 517. Advanced Topics: Sensory Systems
BME 535. Special Topic: Medical Device Design
BME 589. Writing Proposals in BME
BME 591. PhD Readings in BME
BME 592. Special Topics
BME 593. Laboratory Rotations in BME
BME 594. Research Internship
BME 594P. Internship Research Part-Time
BME 595. PhD Research
BME 595A. PhD Research in Absentia
BME 895. Continuation of Master's Enrollment
BME 897. Master's Dissertation
BME 897A. Master's in Absentia
BME 899. Master's Dissertation
BME 899B. Master's Dissertation in Absentia
BME 997. Doctoral Dissertation
BME 999. Doctoral Dissertation

Chemical Engineering

Darren Lipomi
Chair

Alexander Shestopalov
Graduate Director

Overview

Chemical engineering is at the heart of all manufactured goods. The Department of Chemical Engineering at the University of Rochester develops technologies, materials, and processes that benefit society in the areas of clean energy, sustainable process engineering, nanotechnology, and human health. The department was established in 1915 as one of the first chemical engineering programs in the country and has a storied history. Contributions from Rochester faculty, students, and alumni have had global impact. We specialize in applying chemical engineering to materials science and artificial intelligence to solve the grand challenges of the 21st century.

We provide a vibrant learning and working environment. We foster a sense of collective efficacy among our faculty and share the belief that, together, we can make a difference in the lives of our students and society. We maintain an atmosphere of diversity, equity and inclusion, academic integrity, and respect as a way of life.

We offer a first-class engineering education. Students learn how to apply fundamental engineering and scientific principles to design processes for the production, transformation, and transport of energy, chemicals, and materials. We provide training in emerging technologies and computer programming to tackle humanity's major challenges, with the aim to develop the next generation of leaders in chemical engineering. We leverage our strong relationships to industry and academic leaders to create a talent pipeline for a modern workforce. Past graduates of our program have quickly found employment in a wide variety of industries, S&P 500 companies, government positions, and universities. We maintain close professional connections to our alumni, which benefit our current and future students.

Mission Statement and Strategic Goals

Our mission is to provide unparalleled ChE education through outstanding research and scholarship that positively impacts society and our community. Our goals:

- Outstanding, well-funded research
- Symbiotic relationships with LLE, URMC, and throughout AS&E to foster interdisciplinary research
- Excellence in graduate education through MS & PhD programs
- Excellence in undergraduate education, research-oriented education emphasizing quality, and top-notch facilities
- Strong relationships with local, national, and global institutions and industry
- Supportive, inclusive and respectful environment, with equity and integrity.

https://www.hajim.rochester.edu/che/index.html

Graduate Faculty Information

Mitchell Anthamatten, PhD, *Massachusetts Institute of Technology*
Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Laboratory of Laser Energetics
Affiliation: Materials Science

Yasemin Basdogan, PhD, *University of Pittsburgh*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science, Data Science

Pooja Rajendra Bhalode, PhD, *Rutgers University*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering

Siddharth Deshpande, PhD, *Perdue University*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering

Gang Fan, PhD, *University of Texas at Austin*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Darren Lipomi, PhD, *Harvard University*
Professor of Chemical Engineering
Chair, Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Allison Lopatkin, PhD, *Duke University*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation(s): Biomedical Engineering, Data Science, Microbiology and Immunology

Astrid Müeller, PhD, *Max-Planck Institute of Quantum Optics and Ludwig-Maximilians-Universität München*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Marc Porosoff, PhD, *Columbia University*
Associate Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Alexander Shestopalov, PhD, *Duke University*
Associate Professor of Chemical Engineering
Graduate Director, Chemical Engineering
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Laboratory for Laser Energetics, Chemistry
Affiliation: Materials Science

Wyatt Tenhaeff, PhD, *Massachusetts Institute of Technology*
Associate Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Matthew Z. Yates, PhD, *University of Texas at Austin*
Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Admissions

Applying to Doctoral Programs

A complete application to the Department of Chemical Engineering's PhD program contains:

- A completed online application
- A curriculum vitae
- A personal and research statement
- Three letters of recommendation
- Official transcripts
- Official test scores

Applying to the Master's Program

A complete application to the Department of Chemical Engineering's MS program contains:

- A completed online application
- A curriculum vitae
- A personal statement
- Three letters of recommendation
- Official transcript(s)
- Official test scores

Active University of Rochester undergraduates who apply through the 4+1 Option, must include the following materials in their application:

- A completed online application
- Transcript
- A personal statement
- One letter of recommendation

Internal University of Rochester undergraduates who maintain a minimum overall 3.3 GPA during their undergraduate experience, do not need to submit a letter of recommendation. Students with a lower GPA are also encouraged to apply.

Academics

Master's Degrees and Requirements

Plan A: Thesis Option (30 Credit Hours)
Students pursuing the thesis-based MS degree are expected to earn 30 credit hours, with at least 18 credit hours from graduate-level coursework. Students who choose this option must also satisfactorily complete their master's thesis and pass an oral defense. Most students complete the Plan A program in two years.

Plan B: Coursework Option (30 Credit Hours)
Students who pursue the coursework-based MS degree must earn a minimum of 30 graduate credit hours. At least 18 credits should be courses within the chemical engineering department. Students who choose this option are required to pass an oral exit exam. Most students complete the Plan B program in a year and a half.

Core Curriculum

All MS students in the program must complete four core courses, comprising 16 credits or follow one of three concentrations in either Bioengineering, Computational Modeling and Machine Learning or Sustainability, Energy and Environment. Please see our website for more information on MS concentrations.

Doctoral Degrees and Requirements

As part of the PhD program, students must:

- Complete the core chemical engineering curriculum
- Complete a total of 90 credit hours (30 must be formal coursework)
- Serve as teaching assistant for two semesters
- Pass their first-year qualifying exam
- Pass their second-year proposal exam
- Give a research presentation in their fourth year
- Prepare a thesis on original research and its oral defense

For more information on the specific program requirements, please see our website or graduate student manual.

GRADUATE COURSE TITLES

CHE 400. Applied Boundary Value Problems
CHE 402. Advanced Mathematical Methods for Chemical Engineers
CHE 413. Engineering of Soft Matter
CHE 414. Math Methods for Optics and Physics
CHE 431. Chemical Reactor Design
CHE 433. Nano Energy Transport and Conversion
CHE 436. Intro to Systems and Synthetic Biology
CHE 441. Advanced Transport Phenomena
CHE 443. Fluid Dynamics
CHE 444. Heat and Mass Transfer
CHE 454. Interfacial Engineering
CHE 456. Electrochemical Engineering Fundamentals and Applications
CHE 461. Advanced Chemical Kinetics
CHE 462. Cell and Tissue Engineering

CHE 471. Intro to Modeling and Machine Learning
CHE 473. Process Design and Simulation
CHE 468. Fundamentals of Computational Fluid Dynamics
CHE 476. Polymer Chemistry
CHE 477. Advanced Numerical Methods
CHE 480. Introduction to Nanoengineering
CHE 485. Thermodynamics and Stat Mech
CHE 487. Surface Analysis

Computer Science

Chen Ding
Chair

Daniel Gildea
Program Director

Overview

Our graduate program was established in 1974 and has a history of more than 50 years of world-class research, especially in artificial intelligence/human-computer interaction, software systems, and the theory of computation. We provide a collegial, interactive environment in which faculty directly mentor students. All faculty and PhD students, regardless of their area, are familiar with each other's work. This is possible only in a relatively small, close-knit department.

Our philosophy is that computer science research is a community endeavor, crucially dependent on the vitality of the local community in which it takes place. We believe that graduate students are the heart of our research productivity, and we make them first-class department citizens. Graduate students serve on all department committees and are crucial members of faculty and graduate student recruitment efforts.

https://www.cs.rochester.edu/

Graduate Faculty Information

Zhen Bai, PhD, *Cambridge University*
Assistant Professor of Computer Science
Asaro Biggar Family Fellow in Data Sciences
Primary Appointment(s): Computer Science

John Criswell, PhD, *University of Illinois*
Associate Professor of Computer Science
Primary Appointment(s): Computer Science

Chen Ding, PhD, *Rice University*
Professor of Computer Science
Chair, Computer Science
Primary Appointment(s): Computer Science

Daniel Gildea, PhD, *University of California, Berkeley*
Professor of Computer Science
Primary Appointment(s): Computer Science
Affiliation: Data Science

Yanan Guo, PhD, *University of Pittsburgh*
Assistant Professor of Computer Science
Primary Appointment(s): Computer Science

Hanfeng He, PhD, *University of Pennsylvania*
Assistant Professor of Computer Science, Assistant Professor of Data Science
Primary Appointment(s): Computer Science, Data Science

Lane A. Hemaspaandra, PhD, *Cornell University*
Professor of Computer Science
Primary Appointment(s): Computer Science

M. Ehsan Hoque, PhD, *Massachusetts Institute of Technology*
Professor of Computer Science
Primary Appointment(s): Computer Science

Kaave Hossseini, PhD, *University of California, San Diego*
Assistant Professor of Computer Science
Primary Appointment(s): Computer Science

Anson Kahng, PhD, *Carnegie Mellon University*
Assistant Professor of Computer Science, Assistant Professor of Data Science
Primary Appointment(s): Computer Science, Data Science

Christopher Kanan, PhD, *University of California, San Diego*
Associate Professor of Computer Science
Primary Appointment(s): Computer Science

Jiaming Liang, PhD, *Georgia Institute of Technology*
Assistant Professor of Computer Science, Assistant Professor of Data Science
Primary Appointment(s): Computer Science, Data Science

Jiebo Luo, PhD, *University of Rochester*
Professor of Computer Science
Albert Arendt Hopeman Professor of Engineering
Primary Appointment(s): Computer Science, Electrical and Computer Engineering
Joint Appointment(s): Data Science

Fatemeh Nargesian, PhD, *University of Toronto*
Assistant Professor of Computer Science
James P. Wilmot Distinguished Assistant Professor
Primary Appointment(s): Computer Science
Affiliation: Data Science

Sreepathi Pai, PhD, *Indian Institute of Science*
Associate Professor of Computer Science
Primary Appointment(s): Computer Science

Michael L. Scott, PhD, *University of Wisconsin–Madison*
Professor of Computer Science
Arthur Gould Yates Professor of Engineering
Primary Appointment(s): Computer Science

Daniel Stefankovic, PhD, *University of Chicago*
Professor of Computer Science
Primary Appointment(s): Computer Science
Joint Appointment(s): Data Science

Chenliang Xu, PhD, *University of Michigan*
Associate Professor Computer Science
Wilmot Distinguished Professor
Primary Appointment(s): Computer Science
Affiliation: Data Science

Xiangxiang Xu, PhD, *Tsinghua University*
Assistant Professor of Computer Science
Primary Appointment(s): Computer Science

Yukang Yan, PhD, *Tsinghua University*
Assistant Professor of Computer Science
Primary Appointment(s): Computer Science

Yuhao Zhu, PhD, *University of Texas at Austin*
Associate Professor of Computer Science
Primary Appointment(s): Computer Science

Admissions

Applying to Doctoral Programs

PhD in Computer Science Required Materials

- $70 application fee
- Personal statement (Statement of Purpose)
- Transcripts
- English language proficiency scores
- Three letters of recommendation

There is no specific minimum threshold on GRE or English language proficiency scores. The admission decision is based on the overall application package.

All the application materials (including transcripts and letters of recommendation) must arrive before the deadline. Students should initiate their application several weeks ahead of these deadlines to ensure that all materials are received on time.

Applying to Master's Programs

Master of Science in Computer Science Required Materials

- $70 application fee
- Personal statement (Statement of Purpose)
- Transcripts
- English language proficiency scores
- Three letters of recommendation

There is no specific minimum threshold on GRE or English language proficiency scores. The admission decision is based on the overall application package.

All the application materials (including transcripts and letters of recommendation) must arrive before the deadline. Students should initiate their application several weeks ahead of these deadlines to ensure that all materials are received on time.

Academics

Master's Degree Requirements

Students must complete a minimum of 30 credits. Of these credits:

- All courses must be 400/500-level. Up to 10 credits can be courses of 1-2 credit hours.
- Up to six hours can be from research credits, supervised by a faculty member.

MS students must pass a comprehensive examination (or essay), typically in the last semester before graduation.

Some students may need to take one or more 100- or 200-level prerequisite courses. These courses are not counted toward the 30-credit requirement and are typically taken by students who do not have an undergraduate degree in computer science.

Courses offered by departments other than computer science but that are relevant to the degree may be included in the 30 hours, subject to approval of the graduate education committee. In any case, at least 18 hours of the 30 must be courses offered by the Department of Computer Science.

Students must maintain a GPA of 3.0 by the end of their second semester and throughout the rest of their time in the program and must obtain a least a 2.0 in each course that counts toward the 30 credit hours.

Doctoral Degree Requirements

For detailed information about program requirements, please see the PhD Student Handbook.

Students in the PhD in Computer Science program are required to complete:

- Six breadth courses
- CSC 400. Problem Seminar
- All of the area requirements for one of the following areas:
  - Artificial Intelligence
  - Human-Computer Interaction
  - Systems
  - Theory
- PhD thesis proposal and proposal defense
- PhD dissertation and defense
- TA assignments

GRADUATE COURSE TITLES

CSC 400. Problem Seminar
CSC 404. Multiprocessor Architecture
CSC 412. Human Computer Interaction
CSC 413. Introduction to Augmented and Virtual Reality
CSC 416. AR/VR Interaction Design
CSC 427. Introduction to Dip Using Python
CSC 440. Data Mining
CSC 442. Artificial Intelligence
CSC 443. Computational Neuroscience
CSC 444. Machine Reasoning
CSC 445. Deep Learning
CSC 446. Machine Learning
CSC 447. Natural Language Processing
CSC 448. Statistical Speech and Language Processing
CSC 449. Machine Vision
CSC 450. Data Science for Linguistics
CSC 451. Advanced Computer Architecture
CSC 452. Computer Organization
CSC 453. Collaborative Programming and Software Design
CSC 454. Programming Language Design and Implementation
CSC 455. Software Analysis and Improvement
CSC 456. Operating Systems
CSC 457. Computer Networks
CSC 458. Parallel and Distributed Systems
CSC 460. Technology and Climate Change
CSC 461. Database Systems
CSC 462. Computational Introduction to Statistics
CSC 463. Data Management Systems
CSC 464. Computer Audition
CSC 465. Intermediate Statistical Methods
CSC 466. Frontiers in Deep Learning
CSC 478. Comp. Systems Security
CSC 480. Computer Models and Limitations
CSC 481. Introduction to Cryptography
CSC 482. Design and Analysis of Efficient Algorithms
CSC 483. Topics in Cryptography
CSC 484. Advanced Algorithms
CSC 486. Computational Complexity
CSC 487. Sampling Algorithms
CSC 488. Analytic Methods in Computer Science
CSC 489. Algorithmic Game Theory
CSC 490. Supervised Teaching
CSC 491. Independent Study
CSC 494. Master's Internship
CSC 495. Advanced Research CSC
CSC 495A. Master's Research in Absentia
CSC 512. Computer Methods/Cognitive Science
CSC 513. Practicum in Augmented and Virtual Reality
CSC 57(X). Graduate Seminar
CSC 577. Advanced Topics in Computer Vision
CSC 579. Machine-Checked Proofs Using Coq
CSC 591. Independent Study
CSC 594. Internship
CSC 595. PhD Research in CSC
CSC 595A. PhD Research in Absentia
CSC 595B. PhD Research in Absentia Abroad
CSC 597. Computer Science Colloquium

CSC 895. Continuation of Master's Enrollment
CSC 897. Master's Dissertation
CSC 897A. Master's Dissertation in Absentia
CSC 985. Leave of Absence
CSC 986V. Full Time Visiting Student
CSC 995. Continuation of Doctoral Enrollment
CSC 997. Doctoral Dissertation
CSC 997A. Doctoral Dissertation in Absentia
CSC 997B. PhD in Absentia Abroad
CSC 999. Doctoral Dissertation
CSC 999A. Doctoral Dissertation in Absentia
CSC 999B. PhD in Absentia Abroad

Data Science

Ajay Anand
Deputy Director

Bernard Ricca
Director, Healthcare Data Science and AI

The Goergen Institute for Data Science and Artificial Intelligence (GIDS-AI) is Rochester's interdisciplinary data science hub. As part of its mission, GIDS-AI partners with a wide variety of departments and programs across the University, including: Biology, Biomedical Engineering, Biomedical Genetics, Biostatistics and Computational Biology, Brain and Cognitive Sciences, Computer Science, Earth and Environmental Sciences, Electrical and Computer Engineering, Economics, Linguistics, Mathematics, Medical Informatics, Microbiology and Immunology, Political Science, Physics, and Statistics.

http://www.hajim.rochester.edu/dsc

Graduate Faculty Information

Ajay Anand, PhD, *University of Washington*
Professor of Data Science
Deputy Director, Goergen Institute for Data Science and Artificial Intelligence
Primary Appointment(s): Data Science

Cantay Caliskan, PhD, *Boston University*
Associate Professor of Instruction
Primary Appointment(s): Data Science

Mujdat Cetin, PhD, *Boston University*
Professor of Electrical and Computer Engineering, Professor of Computer Science
Professor of Electrical and Computer Engineering, Professor of Computer Science
Robin and Tim Wentworth Director, Goergen Institute for Data Science and Artificial Intelligence; Director, New York State Center for Excellence in Data Science
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science
Affiliation: Data Science

C. M. Downey, PhD, *University of Washington*
Assistant Professor of Linguistics & Data Science
Primary Appointment(s): Linguistics
Joint Appointment(s): Data Science

Justin Fay, PhD, *University of Chicago*
Professor of Biology
Primary Appointment(s): Biology
Affiliation: Data Science

Daniel Gildea, PhD, *University of California, Berkeley*
Professor of Computer Science
Primary Appointment(s): Computer Science
Joint Appointment(s): Data Science

Scott Grimm, PhD, *Stanford University*
Associate Professor of Linguistics
Chair, Department of Linguistics
Primary Appointment(s): Linguistics
Joint Appointment(s): Data Science

Hanfeng He, PhD, *University of Pennsylvania*
Assistant Professor of Computer Science and Data Science
Primary Appointment(s): Computer Science, Data Science

Anson Kahng, PhD, *Carnegie Mellon University*
Assistant Professor of Computer Science and Data Science
Primary Appointment(s): Computer Science, Data Science

Amanda Larracuente, PhD, Cornell University
Professor of Biology
Nathaniel and Helen Wisch Professor of Biology
Primary Appointment(s):Biology
Affiliation: Data Science

Jiaming Liang, PhD, *Georgia Institute of Technology*
Assistant Professor of Computer Science and Assistant Professor of Data Science
Primary Appointment(s): Computer Science, Data Science

Jiebo Luo, PhD, *University of Rochester*
Professor
Albert Arendt Hopeman Professor of Engineering and Professor of Computer Science
Primary Appointment(s): Computer Science, Electrical and Computer Engineering
Joint Appointment(s): Data Science

Yukun Ma, PhD, *Vanderbilt University*
Assistant Professor of Economics & Data Science
Primary Appointment(s): Economics
Joint Appointment(s): Data Science

Gonzalo Mateos Buckstein, PhD, *University of Minnesota*
Associate Professor of Electrical and Computer Engineering
Asaro Biggar Family Fellow in Data Science
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science
Affiliation: Data Science

Matthew McCall, PhD, *Johns Hopkins University*
Associate Professor of Biostatics
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Biomedical Genetics
Affiliation: Data Science

Brendan Mort, PhD, *University at Buffalo*
Assistant Professor of Chemistry
Research Director, Center for Integrated Research and Computing
Primary Appointment(s): Chemistry
Joint Appointment(s): Data Science

Bernard Ricca, PhD, *University of Michigan*
Professor of Instruction
Director, MS in Healthcare Data Science and AI
Primary Appointment(s): Data Science

Fatemeh Nargesian, PhD, *University of Toronto*
Assistant Professor of Computer Science
James P. Wilmot Distinguished Assistant Professor
Primary Appointment(s): Computer Science
Affiliation: Data Science

Adam Purtee, PhD, *University of Rochester*
Associate Professor of Instruction
Primary Appointment(s): Computer Science
Joint Appointment(s): Data Science

Daniel Stefankovic, PhD, *University of Chicago*
Professor of Computer Science
Primary Appointment(s): Computer Science
Joint Appointment(s): Data Science

Chenliang Xu, PhD, *University of Michigan*
Associate Professor Computer Science
Wilmot Distinguished Professor
Primary Appointment(s): Computer Science
Joint Appointment(s): Data Science

Eustrat Zhupa, PhD, *University of Bari*
Assistant Professor of Instruction
Primary Appointment(s): Computer Science
Affiliation: Data Science

Admissions

Applying to Master's Programs

The Master of Science in Data Science program is seeking motivated, qualified, and well-rounded applicants. A bachelor's degree is required, preferably in a STEM field (but not required). Prospective students should have undergraduate mathematics experience through basic calculus, but do not need college-level statistics or data analytics. For admission to the MS Data Science program, applicants also should have some programming experience. For admission to the MS Healthcare Data Science and AI program, preferred prospective students should demonstrate experience or interest in healthcare. Admission to the program is decided by the graduate admissions committee.

Required Application Materials

- Graduate program online application
- Academic transcripts

- Statement of purpose
- Resume or curriculum vitae (CV)
- Three letters of recommendation (two for Healthcare Data Science and AI)
- For non-native English speakers: Official English-language proficiency test scores are required. TOEFL, IELTS, and Duolingo scores are acceptable.
- GRE scores (optional)

Applying to Advanced Certificates

To be considered for admission into the Data Science Advanced certificate, a student must have completed a bachelor's degree. All majors are considered. They should have one year or the equivalent of coursework in undergraduate calculus and linear algebra, proficiency in introductory programming and data structures (Python or Java) through coursework or equivalent experience, and interest in and motivation to pursue large-scale quantitative data analytics.

Materials required for application:

- Online application
- Official transcript(s) from bachelor's degree (plus any other higher education experiences)
- Personal statement
- Resume/CV
- Two letters of recommendation (must be received by application deadline)
- Optional GRE and TOEFL/IELTS scores

Academics

Advanced Certificates and Requirements

The Advanced Certificate in Data Science program is 16 credits, or the equivalent of four graduate-level courses. The program can be completed in two to four semesters of part-time study.

There are three different course plans designed to suit each student's unique background and level of preparation.

Students interested in transferring credits earned from the advanced certificate to the Master of Science (MS) in data science program should contact the program coordinator.

Master's Degrees and Requirements

The Goergen Institute for Data Science and Artificial Intelligence offers a program of study leading to a Master of Science degree. The 30-credit interdisciplinary degree program is completed in two to three semesters of full-time study. Students can select a concentration in computational and statistical methods, health and biomedical science, or business and social science by completing eight credits of elective courses in one area in addition to the required core courses. All students participate in an industry practicum course, serving as their Plan B (non-thesis) exit exam.

In 2023, a new track in Genomics was approved by the New York State Department of Education which totals 33 credits and covers theoretical and applied aspects of data science and genomics. A Genomic Intensive Data Science Research, Education and Mentorship (GIDS-REM) fellowship is available to applicants interested in the genomics track.

The components of the program are:

- An optional summer bridging course for students who come without a strong computer science background
- Four required core courses
- A required four-credit practicum: Students work in teams to implement a significant system or analysis. Each student gives a final oral presentation.
- A minimum of three electives selected from the area courses or research, for a total of 10 credits or more

In 2025, the Goergen Institute for Data Science and Artificial Intelligence began offering a program of study leading to a Master of Science degree in Healthcare Data Science and Artificial Intelligence. The 32-credit interdisciplinary degree program covers applied and theoretical aspects of data science and artificial intelligence pertaining to healthcare and is designed to be completed in 4-8 semesters of part-time study or two semesters of full-time study. All students participate in a healthcare practicum course, serving as their Plan B (non-thesis) exit exam.

The components of the program are:

- Eight required courses, which includes the practicum
- A required four-credit practicum: Students work in teams to implement a significant system or analysis. Each student gives a final oral presentation.

GRADUATE COURSE TITLES

DSCC 401. Tools for Data Science
DSCC 402. Data Science at Scale
DSCC 410. Digital Imaging
DSCC 420. Introduction to Random Processes
DSCC 435. Optimization for Machine Learning
DSCC 440. Data Mining
DSCC 442. Network Science Analytics
DSCC 449. Computer Models of Perception and Cognition
DSCC 461. Database Systems
DSCC 462. Computational Introduction to Statistics
DSCC 463. Data Management Systems
DSCC 465. Introduction to Statistical Machine Learning
DSCC 475. Time Series Analysis & Forecasting in Data Science
DSCC 481. Python Programming and Tools for Data Science
DSCC 482. Statistical Foundations and Data Visualization
DSCC 483. Data Science Practicum
DSCC 484. Healthcare Data Management and Clinical Informatics
DSCC 485. Introduction to Privacy Fairness and Ethical Considerations for Healthcare Data Science
DSCC 486. Applied Machine Learning and Healthcare Data Mining

DSCC 487. Inferential Statistics for Data Science
DSCC 488. Deep Learning for Healthcare
DSCC 489: Healthcare Data Science Practicum
DSCC 491. Master's Research
DSCC 494. Internship
DSCC 495. Master's Independent Study
DSCC 511. Large Language Models
DSCC 897. Master's Dissertation

Electrical and Computer Engineering

Marvin Doyley
Chair
Gonzalo Mateos Buckstein
Director of Graduate Study

Overview

The Department of Electrical and Computer Engineering offers graduate work leading to the MS and PhD degrees in electrical engineering and the MS in diagnostic imaging. The faculty emphasizes graduate research and instruction in the general areas of electronics and computer systems, optoelectronics, silicon nanoscience, signal/image/audio processing and biomedical imaging, diagnostic imaging, superconductivity and solid state, sensors, networks, electromechanical systems, robotics, and bioinformatics. The faculty serve as directors or key researchers in leading national centers such as the Center for Biomedical Ultrasound, the Center for Emerging and Innovative Sciences, the Robotics and Artificial Intelligence Laboratory, the Laboratory for Laser Energetics, and the School of Medicine and Dentistry. Outstanding opportunities for graduate student research and training are available at these on-campus centers and in the other departmental laboratories. Research is supervised by members of the faculty and often, though not necessarily, forms the basis for the master's thesis or doctoral dissertation.

Mission Statement and Strategic Goals

Our mission is to empower our students to be leaders, pursue their academic and professional passions, and model partnerships with educational, civic, cultural, health, and business communities. We will teach our graduates how to create innovative connections with various sectors. We will also teach them to value ethics and diverse perspectives. Our graduates will serve their communities by developing programs that will improve the world around them. We will foster supportive training environments such that our graduate students can learn, discover, heal, and create.

https://hajim.rochester.edu/ece/index.html

Graduate Faculty Information

Mark F. Bocko, PhD, *University of Rochester*
Professor
Professor of Electrical and Computer Engineering, Director for Emerging and Innovative Sciences
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Mujdat Cetin, PhD, *Boston University*
Professor of Electrical and Computer Engineering, Professor of Computer Science
Robin and Tim Wentworth Director of the Goergen Institute for Data Science, Director of New York State Center for Excellence in Data Science
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science, Data Science

Lisha Chen, PhD, *Rensselaer Polytechnic Institute*
Assistant Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering

Hanan Dery, PhD, *Technion–Israel Institute of Technology*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Marvin Doyley, PhD, *Institute of Cancer Research (Sutton), University of London Imperial College*
Professor of Electrical and Computer Engineering
Chair, Department of Electrical and Computer Engineering, Wilson Professor of Electronic Imaging
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Biomedical Engineering, Imaging Sciences (Radiology)
Affiliation: Materials Science

Zhiyao Duan, PhD, *Northwestern University*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science

Eby G. Friedman, PhD, *University of California, Irvine*
Professor of Electrical and Computer Engineering
Distinguished Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering

Tong Geng, PhD, *Boston University*
Assistant Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science

Wendi Heinzelman, PhD, *Massachusetts Institute of Technology*
Professor of Electrical and Computer Engineering
Dean, Hajim School of Engineering & Applied Sciences
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science

Thomas M. Howard, PhD, *Carnegie Mellon University*
Associate Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science

Michael Huang, PhD, *University of Illinois at Urbana-Champaign*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science

Zeljko Ignjatovic, PhD, *University of Rochester*
Associate Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering

Selcuk Kose, PhD, *University of Rochester*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering

Qiang Lin, PhD, *University of Rochester*
Professor of Electrical and Computer Engineering
Dean's Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Optics

Gonzalo Mateos Buckstein, PhD, *University of Minnesota*
Associate Professor, Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Data Science

Jack G. Mottley, PhD, *Washington University in St. Louis*
Associate Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Biomedical Engineering

Kevin J. Parker, PhD, *Massachusetts Institute of Technology*
Professor
Dean Emeritus, School of Engineering and Applied Sciences, William F. May Professor of Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Biomedical Engineering, Imaging Sciences

Gaurav Sharma, PhD, *North Carolina State University*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science, Biostatistics and Computational Biology

Roman Sobolewski, PhD, *Polish Academy of Sciences*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics, Laboratory for Laser Energetics
Affiliation: Materials Science

Hui Wu, PhD, *California Institute of Technology*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering

Stephen Wu, PhD, *University of California, Berkeley*
Associate Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Admissions

Applying to Doctoral Programs

The Department of Electrical and Computer Engineering (ECE) at the University of Rochester offers a PhD in electrical engineering.

The following materials are required:

- University of Rochester graduate program application form
- Personal statement (upload to the application database)
- Three letters of recommendation (upload)
- Official transcripts (upload)
- Official copy of English proficiency test (TOEFL, IELTS, or Duolingo) results
- Any supplemental material you want to provide (upload)
- Optional GRE score (If GRE score is self-reported, an official score report from ETS is required for verification.)

Applying to Master's Programs

The Department of Electrical and Computer Engineering (ECE) at the University of Rochester offers a Master of Science in electrical engineering and a Master of Science in diagnostic imaging.

The following materials are required:

- University of Rochester graduate program application form
- Personal Statement (upload to the application database)
- Three letters of recommendation (upload)
- Official transcripts (upload)
- Official copy of English proficiency test (TOEFL, IELTS, or Duolingo) results
- Any supplemental material you want to provide (upload)
- Optional GRE score (If GRE score is self-reported, an official score report from ETS is required for verification.)

Academics

Master's Degrees and Requirements

The MS degree requires 30 hours of graduate courses at the 400-level or higher. There must be at least 16 credit hours in electrical and computer engineering coursework exclusive of research or reading courses.

Each MS degree candidate must declare a concentration of study in one of the research focus areas of our department. Concentrations are organized as three-course sequences. The goal is to provide depth in at least one area, as opposed to a random sampling of courses, with the expectation that students should be able to follow the current research literature in at least one research concentration upon graduation. The areas of concentration are machine learning/artificial intelligence, musical acoustics and signal processing, signal/image processing and communications, biomedical/ultrasound, VLSI/IC microelectronics and computer design, superconducting and solid-state electronics, optoelectronics, quantum engineering, robotics, and diagnostic imaging.

Each MS candidate may choose to complete six to 12 credit hours of research and write a research thesis (Plan A) or take an MS exam (Plan B), which allows for zero to six credit hours of research.

Plan A, Thesis Option: All thesis students must successfully defend a thesis. The defense must be conducted by a committee of no less than two ECE faculty members and one outside faculty member.

Plan B, Exam Option: All part-time and non-thesis students must pass an MS exam, which can be a term project, an essay, or an oral exam. The exam must be conducted by a committee of no less than two ECE faculty members. The exam must be completed by mid-December for fall degree conferral or by mid-April for spring conferral.

PhD students who wish to receive an MS degree can satisfy the MS exam requirement by successfully completing the PhD comprehensive examination and submitting an MS program of study for 30 credits.

Doctoral Degrees and Requirements

The PhD degree requires 90 credit hours of graduate study (60 credit hours beyond the master's degree), including 24 credits of ECE coursework meeting a department requirement of four courses in the student's chosen concentration area and two other courses outside the concentration area. Students are encouraged to begin research early in their programs. The comprehensive examination, taken by the second to third semester of study once the concentration requirements have been met, is required for continuation in the PhD program.

All doctoral students must pass a PhD qualifying examination and submit a satisfactory written PhD thesis proposal after their third year of full-time graduate study. Students who have passed the PhD qualifying exam are assisted in matters pertaining to their thesis research by a faculty thesis advisory committee. The research advisor serves as chair. The committee meets with the student at least once each year.

GRADUATE COURSE TITLES

ECE 400. Computer Organization
ECE 401. Advanced Computer Architecture
ECE 402. Electrical Engineering Fundamentals
ECE 403. Advanced Computer Architecture for Machine Learning
ECE 404. Multiprocessor Architecture

ECE 405. Ising Machines: Principles and Practices
ECE 408. The Art of Machine Learning
ECE 410. Introduction to Augmented and Virtual Reality
ECE 411. Selected Topics in Augmented and Virtual Reality
ECE 413. Introduction to Hardware Security
ECE 417. Robot Motion Planning and Manipulation
ECE 418. Mobile Robot Estimation, Mapping and Interaction
ECE 420. Introduction to Quantum Information & Science
ECE 422. Nanoelectronic Devices
ECE 423. Semiconductor Devices
ECE 425. Superconductivity and the Josephson Effect
ECE 427. Superconductor Electronics
ECE 429. Audio Electronics
ECE 433. Musical Acoustics
ECE 436. Nanophotonic Devices
ECE 439. Electroacoustics, Audio Reproduction, and Spatial Audio
ECE 440. Introduction to Random Processes
ECE 441. Detection Estimation Theory
ECE 442. Network Science Analytics
ECE 445. Wireless Communications
ECE 446. Digital Signal Processing
ECE 447. Introduction to Digital Image Processing Using Python
ECE 452. Medical Imaging – Theory & Implementation
ECE 454. Quantum Information Processing
ECE 458. Algorithmic Aspects of Computational Imaging: Mathematical and Machine Learning-based Methods
ECE 460. Digital Radio Engineering
ECE 461. Introduction to VLSI
ECE 468. Advanced Analog CMOS
ECE 469. High-Speed Integrated Electronics
ECE 470. Digital Audio Effects
ECE 472. Audio Signal Processing
ECE 473. Audio for Gaming
ECE 475. Audio Software Design I
ECE 476. Audio Software Design II
ECE 477. Computer Audition
ECE 478. Revolutions in Sound
ECE 480. Advanced Audio Amplifier Design
ECE 481. Clinical Imaging I
ECE 482. Clinical Imaging II
ECE 484. Deep Learning in Imaging
ECE 485. Inverse Problems in Imaging
ECE 486. Imaging Labs
ECE 487. Entrepreneurship for Engineers
ECE 489. MS Research Seminar Audio/Acoustics
ECE 491. Master's Reading Course ECE
ECE 494. MS Research Internship
ECE 495. Master's Research in ECE
ECE 495A. MS Research in Absentia
ECE 495B. MS Research in Absentia Abroad
ECE 501. Practicum in Augmented and Virtual Reality
ECE 594. PhD Research Internship
ECE 594T. PhD Transitional Internship
ECE 595. PhD Research in ECE
ECE 595A. PhD Research in Absentia
ECE 595B. PhD Research in Absentia Abroad
ECE 597. ECE Colloquium
ECE 895. Continuation of Master's Enrollment
ECE 897. Master's Dissertation
ECE 897A. Master's Dissertation in Absentia
ECE 897B. Master's Dissertation in Absentia Abroad
ECE 899. Master's Dissertation
ECE 899A. Master's Dissertation in Absentia
ECE 899B. Master's Dissertation in Absentia Abroad
ECE 986V. Full-Time Visiting Student
ECE 987V. Part-Time Visiting Student
ECE 995. Continuation of Doctoral Enrollment
ECE 997. Doctoral Dissertation
ECE 997A. Doctoral Dissertation in Absentia
ECE 997B. Doctoral Dissertation in Absentia Abroad
ECE 999. Doctoral Dissertation
ECE 999. Doctoral Dissertation in Absentia
ECE 999B. Doctoral Dissertation in Absentia Abroad

Materials Science

Bradley Nilsson
Director

Overview

The interdepartmental graduate program in materials science offers MS and PhD degrees in materials science. There are two core areas of required courses, with flexibility to allow students to choose from the course list in the Graduate Bulletin under materials science. These courses are generally also cross-listed with one of 12 participating science and engineering departments.

Mission Statement

Through interdisciplinary research, we achieve breakthroughs in materials science and engineering to make our world ever better.

Strategic Goals

- Enhance collaborative research within the Materials Science Program
- Improve and consolidate the Materials Science research infrastructure (shared facilities, labs, and equipment)
- Grow and diversify the graduate educational programs in Materials Science
- Develop meaningful, long-term relationships with alumni

https://www.hajim.rochester.edu/matsci/

Graduate Faculty Information

Niaz Abdolrahim, PhD, *Washington State University*
Assistant Professor of Mechanical Engineering
Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Mitchell Anthamatten, PhD, *Massachusetts Institute of Technology*
Professor of Chemical Engineering
Chair, Department of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Laboratory of Laser Energetics
Affiliation: Materials Science

Hesam Askari, PhD, *Washington State University*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Affiliation: Materials Science

Brandon R. Barnett, PhD, *University of California, San Diego*
Assistant Professor of Chemistry
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Yasemin Basdogan, PhD, *University of Pittsburgh*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Nicholas P. Bigelow, PhD, *Cornell University*
Professor of Physics and Astronomy, Professor of Optics
Lee A. DuBridge Professor of Physics; Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Physics and Astronomy
Joint Appointment(s): Optics, Laboratory for Laser Energetics
Affiliation: Materials Science

Machiel Blok, PhD, *Delft University of Technology*
Assistant Professor of Physics
Primary Appointment(s): Physics
Affiliation: Materials Science

Mark F. Bocko, PhD, *University of Rochester*
Professor of Electrical and Computer Engineering
Director, Emerging and Innovative Sciences
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Robert Boyd, PhD, *University of California, Berkeley*
Professor of Optics, Professor of Physics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Mark Buckley, PhD, *Cornell University*
Associate Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Center for Visual Science, Center for Musculoskeletal Research
Affiliation: Materials Science

Jaime Cardenas, PhD, *University of Alabama*
Assistant Professor of Optics
Primary Appointment(s): Optics
Joint Appointment(s): Physics
Affiliation: Materials Science

Scott Carney, PhD, *University of Rochester*
Professor of Optics
Primary Appointment(s): Optics
Affiliation: Materials Science

Shaw H. Chen, PhD, *University of Minnesota*
Professor of Chemical Engineering
Director, Center of Advanced Materials for Photonics and Lasers
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Center of Advanced Materials for Photonics and Lasers
Affiliation: Materials Science

Gilbert Collins, PhD, *The Ohio State University*
Professor of Mechanical Engineering
Tracy Hyde Harris Professor of Mechanical Engineering; Associate Director, Science, Technology and Academics, Laboratory for Laser Energetics; Distinguished Scientist and Senior Scientist, Laboratory for Laser Energetics; Director, Center for Matter at Atomic Pressures
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Lisa DeLouise, PhD, *Pennsylvania State University*
Associate Professor of Dermatology
Primary Appointment(s): Dermatology (SMD)
Joint Appointment(s): Biomedical Engineering, Environmental Health Science Center
Affiliation: Materials Science

Hanan Dery, PhD, *Technion-Israel Institute of Technology*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Stephen Dewhurst, PhD, *University of Nebraska*
Professor
Albert and Phyllis Ritterson Professor, Vice Dean for Research (SMD)
Primary Appointment(s): Microbiology and Immunology
Affiliation: Materials Science

William R. Donaldson, PhD, *Cornell University*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Laboratory for Laser Energetics
Joint Appointment(s): Electrical and Computer Engineering
Affiliation: Materials Science

Marvin Doyley, PhD, *Institute of Cancer Research (Sutton), University of London Imperial College*
Professor of Electrical and Computer Engineering
Chair, Department of Electrical and Computer Engineering; Wilson Professor of Electronic Imaging
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Biomedical Engineering, Imaging Sciences
Affiliation: Materials Science

Gang Fan, PhD, *University of Texas at Austin*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Ignacio Franco, PhD, *University of Toronto*
Associate Professor of Chemistry
Primary Appointment(s): Chemistry
Joint Appointment(s): Physics
Affiliation: Materials Science

Paul D. Funkenbusch, PhD, *Michigan Technological Institute*
Professor of Mechanical Engineering, Professor of Materials Science
Associate Dean for Education and New Initiatives, Hajim School of Engineering & Applied Sciences,
Primary Appointment(s): Mechanical Engineering
Affiliation: Materials Science

Chunlei Guo, PhD, *University of Connecticut*
Professor of Optics, Professor of Physics
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics, Physics
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

David Harding, PhD, *Cambridge University*
Professor
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Laboratory for Laser Energetics
Joint Appointment(s): Mechanical Engineering, Physics and Astronomy
Affiliation: Materials Science

Suxing Hu, PhD, *Shanghai Institute of Optics and Fine Mechanics*
Associate Professor (Research) in Mechanical Engineering
Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Laboratory for Laser Energetics
Joint Appointment(s): Mechanical Engineering, Physics and Astronomy
Affiliation: Materials Science

Pengfei (Frank) Huo, PhD, *Boston University*
Associate Professor of Chemistry, Associate Professor of Optics
Primary Appointment(s): Chemistry
Joint Appointment(s): Optics
Affiliation: Materials Science

Andrew N. Jordan, PhD, *University of California, Santa Barbara*
Professor (Research) in Physics
Primary Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Douglas H. Kelley, PhD, *University of Maryland*
Associate Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Kathryn Knowles, PhD, *Northwestern University*
Assistant Professor of Chemistry
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Wayne Knox, PhD, *University of Rochester*
Professor of Optics, Professor of Physics, Professor of Visual Science, Professor of Materials Science
Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy, Center for Visual Science, Materials Science, Laboratory for Laser Energetics
Affiliation: Materials Science

Todd D. Krauss, PhD, *Cornell University*
Professor of Chemistry, Professor of Optics
Primary Appointment(s): Chemistry
Joint Appointment(s): Optics
Affiliation: Materials Science

John Lambropoulos, PhD, *Harvard University*
Professor of Mechanical Engineering, Professor of Materials Science
Senior Scientist and Distinguished Scientist, Laboratory for Laser Energetics; Director, Graduate Studies for Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Darren Lipomi, PhD, *Harvard University*
Professor of Chemical Engineering
Chair, Department of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Svetlana G. Lukishova, PhD
Professor of Optics
Primary Appointment(s): Optics
Affiliation: Materials Science

Ellen Matson, PhD, *Purdue University*
Associate Professor of Chemistry
Director of Graduate Studies
Primary Appointment(s): Chemistry
Affiliation: Materials Science

David M. McCamant, PhD, *University of California, Berkeley*
Associate Professor of Chemistry
Primary Appointment(s): Chemistry
Affiliation: Materials Science

James McGrath, PhD, *Harvard University–Massachusetts Institute of Technology*
Professor of Biomedical Engineering
Primary Appointment(s): Biomedical Engineering
Affiliation: Materials Science

Anne S. Meyer, PhD, *Yale University*
Associate Professor of Biology
Primary Appointment(s): Biology
Affiliation: Materials Science

Benjamin L Miller, PhD, *Stanford University*
Professor of Biomedical Engineering, Professor of Optics, Professor of Biochemistry and Biophysics
Dean's Professor of Dermatology
Primary Appointment(s): Dermatology (SMD)
Joint Appointment(s): Optics, Biomedical Engineering
Affiliation: Materials Science

Astrid Müeller, PhD, *Max-Planck Institute of Quantum Optics and Ludwig-Maximilians-Universität München*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

John M. Nichol, PhD, *University of Illinois at Urbana-Champaign*
Associate Professor of Physics
Primary Appointment(s): Physics
Affiliation: Materials Science

Bradley L. Nilsson, PhD, *University of Wisconsin–Madison*
Professor of Chemistry
Director, Materials Science Program
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Benjamin E. Partridge, PhD, *University of Pennsylvania*
Assistant Professor of Chemistry
Primary Appointment(s): Chemistry
Joint Appointment(s): Chemical Engineering
Affiliation: Materials Science

Andrea Pickel, PhD, *University of California, Berkeley*
Assistant Professor of Mechanical Engineering
Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Marc Porosoff, PhD, *Columbia University*
Assistant Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Alice C. Quillen, PhD, *California Institute of Technology*
Professor of Physics and Astronomy
Primary Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Lewis Rothberg, PhD, *Harvard University*
Professor of Chemistry
Primary Appointment(s): Chemistry
Joint Appointment(s): Physics
Affiliation: Materials Science

Michael T. Ruggiero, PhD, *Syracuse University*
Associate Professor of Chemistry
Primary Appointment(s): Chemistry
Joint Appointment(s): Chemical Engineering
Affiliation: Materials Science

James R. (Ryan) Rygg, PhD, *Massachusetts Institute of Technology*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Alexander Shestopalov, PhD, *Duke University*
Associate Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Laboratory for Laser Energetics, Chemistry
Affiliation: Materials Science

Sobhit Singh, PhD, *West Virginia University*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Affiliation: Materials Science

Roman Sobolewski, PhD, *Polish Academy of Sciences*
Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics, Laboratory for Laser Energetics
Affiliation: Materials Science

Wyatt Tenhaeff, PhD, *Massachusetts Institute of Technology*
Associate Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Agnes E. Thorarinsdottir, PhD, *Northwestern University*
Assistant Professor of Chemistry
Primary Appointment(s): Chemistry
Affiliation: Materials Science

Nick Vamivakas, PhD, *Boston University*
Professor of Optics, Professor of Physics
Dean, Graduate Education and Postdoctoral Affairs for Arts, Sciences and Engineering
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Richard Waugh, PhD, *Duke University*
Professor of Biomedical Engineering
Vice Provost for Research
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Mechanical Engineering, Pharmacology and Physiology, Biochemistry and Biophysics
Affiliation: Materials Science

Andrew D. White, PhD, *University of Washington*
Associate Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Affiliation: Materials Science

Gary W. Wicks, PhD, *Cornell University*
Professor of Optics
Primary Appointment(s): Optics
Affiliation: Materials Science

Stephen Wu, PhD, *University of California, Berkeley*
Assistant Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Physics
Affiliation: Materials Science

Matthew Z. Yates, PhD, *University of Texas at Austin*
Professor of Chemical Engineering
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Wenjie Zang, PhD, *National University of Singapore*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Affiliation: Materials Science

Admissions

Applying to Doctoral Programs

Please use the online application to submit each of the required documents below. All material submitted will be uploaded to your application record.

Required Application Materials

- Personal statement
- Transcripts of college and university grades—unofficial documents are acceptable
- Resume/CV
- Three letters of recommendation
- TOEFL or IELTS scores for non-native English speakers

The majority of financial aid is awarded to students beginning their graduate program in the fall, so spring admission is not offered.

Applying to Master's Programs

Applications for fall admission into the MS program are on a rolling admissions until April 15 for international applicants and until June 1 for domestic applicants.

Please use the online application to submit each of the required documents below. All material submitted will be uploaded to your application record.

Application documents:

- Personal statement
- Transcripts of college and university grades—unofficial documents are acceptable
- Resume/CV
- Three letters of recommendation
- TOEFL or IELTS scores for non-native English speakers

Academics

Master's Degrees and Requirements

The master's degree in materials science at the University of Rochester requires a minimum of 30 credit hours of graduate courses. To obtain their MS, students in this program can choose from two plans: Plan A, with thesis, or Plan B, without thesis. Plan B is the default option for entering students.

If a student wishes to pursue a Plan A path instead, it is the student's responsibility to make arrangements with a faculty thesis advisor to supervise their work and to inform the materials science graduate coordinator.

Plan A: Thesis: For students pursuing the MS degree with thesis, the following requirements apply:

- A minimum of 20 credit hours of materials science graduate courses
- Ten credit hours of research
- Successful completion of an oral defense of the thesis
- The oral defense will take place after all other degree requirements have been completed.

- **Plan B: Without a Thesis:** For students electing to obtain the MS degree without a thesis, the following requirements apply:
- A minimum of 24 credit hours of materials science graduate courses
- Six credit hours of other related courses
- A comprehensive oral examination

Doctoral Degrees and Requirements

Entering with a BS Degree

A typical program for a materials science (MSC) PhD student entering with a BS degree consists of:

- A minimum of 24 credit hours of MSC graduate courses, excluding reading courses
- Eight credit hours of other related courses
- 58 credit hours of research

Entering with an MS Degree

A typical program for a MSC PhD student entering with an MS degree consists of:

- A minimum of 24 credit hours of MSC graduate courses
- 36 credit hours of research
- Successful completion of an oral defense of the thesis

Exams and Dissertation

A preliminary examination in materials science is normally taken by all PhD students at the end of the spring semester, following two semesters of coursework.

The student is given three research papers in materials science to study and is asked to prepare a written report on the topic of this research. The examination consists of an oral presentation on the same topic before a faculty committee.

Students are required to pass this exam (along with course grades and research aptitude) to continue in the PhD program. Students also are expected to conduct research during the summer.

Students who pass the preliminary exam and faculty evaluation must take an oral PhD qualifying exam in their third year of graduate study. This exam is on a research topic that should lead to the dissertation. It also requires a written report and a presentation to a faculty research advisory committee. Passing this exam officially admits students to PhD degree candidacy.

The remaining time (typically one year or more, but at least six months) is spent completing the dissertation research and the written PhD thesis. Students defend the thesis in the final oral examination.

GRADUATE COURSE TITLES

MSC 409. Mechanical Properties of Solids
MSC 416. X-Ray Crystallography
MSC 418. Statistical Mechanics
MSC 423. Semiconductor Devices
MSC 424. Robust Design/QualityMSC 432. Opto-Mechanical
MSC 433. Nanoscale Energy Transport and Conversion
MSC 437. Nanophotonic/Nanomechanical Devices
MSC 442. Microbiomechanics
MSC 444. Continuum Mechanics
MSC 446. Liquid Crystal Materials
MSC 450. Introduction to Quantum Theory of Materials
MSC 451. Biomedical Ultrasound
MSC 454. Interfacial Engineering
MSC 456. Chemical Bonds: From Molecules to Materials
MSC 458. Electrochemistry & Engineering and Fuel Cell

MSC 461. Advanced Chemical Kinetics
MSC 462. Cell and Tissue Engineering
MSC 463. NMR Spectroscopy
MSC 465. Principles of Lasers
MSC 470. Optical Properties of Materials
MSC 476. Polymer Chemistry
MSC 478. Machine Learning Molecule and Materials
MSC 480. Introduction to Materials Science
MSC 483. Biosolid Mechanics
MSC 486. Visco in Bio Tissues
MSC 495. Master Research
MSC 496. MSC Graduate Seminar
MSC 507. Sem Practicum
MSC 595. Research in Materials Science
MSC 895. Continuation of Master's Enrollment
MSC 897. Master's Dissertation
MSC 899. Master's Dissertation
MSC 995. Continuation of Doctoral Enrollment
MSC 997. Doctoral Dissertation
MSC 999. Doctoral Dissertation

Mechanical Engineering

Renato Perucchio
Chair

John Lambropoulos
Director of Graduate Studies

Overview

Based on a firm foundation of basic science, applied mathematics, and engineering sciences, the Department of Mechanical Engineering offers a rigorous program designed to prepare well-trained, creative, responsible engineers capable of assuming leadership roles in their profession.

Students apply the latest software to problems in the mechanics of solid fluids, materials science, mechanical systems, and advanced power applications, among others.

Broad, hands-on laboratory and advanced design projects offer significant experience in experimental and computational work. These experiences complement a curriculum that includes a strong focus on the analysis, design, and development of mechanical and thermal systems.

In addition to strengthening leadership and communications skills necessary for excelling in the field, the program offers a deep understanding of the broad social and economic impacts of engineering.

http://www.hajim.rochester.edu/me/

Graduate Faculty

Niaz Abdolrahim, PhD, *Washington State University*
Associate Professor of Mechanical Engineering
Faculty Development Officer
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Hussein Aluie, PhD, *Johns Hopkins University*
Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Hesam Askari, PhD, *Washington State University*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Affiliation: Materials Science

Riccardo Betti, PhD, *Massachusetts Institute of Technology*
Professor of Mechanical Engineering, Professor of Physics and Astronomy
Robert L. McCroy Professor of Mechanical Engineering; Chief Scientist and Distinguished Scientist, Laboratory for Laser Energetics; Director, Fusion Science Center of Extreme States of Matter and Fast Ignition n
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics and Astronomy, Laboratory for Laser Energetics

Kimberly Boster, PhD, *Brigham Young University*
Assistant Professor (Research) of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Ethan Burnham-Fay, PhD, *University of Rochester*
Assistant Professor of Mechanical Engineering
Research Engineer, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Robert Clark, PhD, *Virginia Polytechnic Institute and State University*
Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Gilbert Collins, PhD, *The Ohio State University*
Professor of Mechanical Engineering
Tracy Hyde Harris Professor of Mechanical Engineering; Associate Director, Science, Technology and Academics, Laboratory for Laser Energetics; Distinguished Scientist and Senior Scientist, Laboratory for Laser Energetics; Director, Center for Matter at Atomic Pressures
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Jonathan Davies
Assistant Professor (Research) of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Jonathan Ellis, PhD, *Delft University of Technology*
Associate Professor (Visiting Research) of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Paul D. Funkenbusch, PhD, *Michigan Technological Institute*
Professor of Mechanical Engineering, Professor of Materials Science
Associate Dean, Education and New Initiatives, Hajim School of Engineering & Applied Sciences
Primary Appointment(s): Mechanical Engineering
Affiliation: Materials Science

Victor L. Genberg, PhD, *Case Western Reserve University*
Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Rachel Glade, PhD, *University of Colorado, Boulder*
Assistant Professor of Earth and Environmental Sciences, Assistant Professor of Mechanical Engineering
Primary Appointment(s): Earth and Environmental Sciences
Joint Appointment(s): Mechanical Engineering

Valeri Goncharov, PhD, *University of Rochester*
Assistant Professor (Research) of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Varchas Gopalaswamy, PhD, *University of Rochester*
Rank: Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Suxing Hu, PhD, *Shanghai Institute of Optics and Fine Mechanics*
Professor (Research) of Mechanical Engineering
Distinguished Scientist, Laboratory for Laser Energetics; Group Leader, HEDP-Theory Group, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Douglas H. Kelley, PhD, *University of Maryland*
Professor of Mechanical Engineering
Professor of Mechanical Engineering; Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

John Lambropoulos, PhD, *Harvard University*
Professor of Mechanical Engineering, Professor of Materials Science
Professor of Mechanical Engineering; Professor of Materials Science; Distinguished Scientist and Senior Scientist, Laboratory for Laser Energetics; Director, Graduate Studies, Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Choongheon Lee, PhD, *University of Nebraska-Lincoln*
Assistant Professor of Research
Primary Appointment(s): Mechanical Engineering

Amy L. Lerner, PhD, *University of Michigan*
Associate Professor of Biomedical Engineering, Associate Professor of Mechanical Engineering
Academic Director, Center for Medical Technology and Innovation
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Center for Musculoskeletal Research

Ibrahim Mohammad, PhD, *University of Rochester*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Christopher Muir, PhD, *Lehigh University*
Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Jong Hoon Nam, PhD, *Virginia Tech*
Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Renato Perucchio, PhD, *Cornell University*
Professor of Mechanical Engineering, Professor of Biomedical Engineering
Chair, Mechanical Engineering; Program Director, Archaeology, Technology, and Historical Structures
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Biomedical Engineering

Andrea Pickel, PhD, *University of California, Berkeley*
Assistant Professor of Mechanical Engineering
Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Danae Polsin, PhD, *University of Rochester*
Assistant Professor of Mechanical Engineering
Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Sean Regan, PhD, *Johns Hopkins University*
Professor of Mechanical Engineering
Distinguished Scientist and Director, Experimental Division, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Chuang Ren, PhD, *University of Wisconsin–Madison*
Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics, Laboratory for Laser Energetics

Ryan J. Rygg, PhD, *Massachusetts Institute of Technology*
Assistant Professor (Research) of Mechanical Engineering, Assistant Professor (Research) of Physics, Senior Scientist at Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering

Adam Sefkow, PhD, *Princeton University*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Physics, Laboratory for Laser Energetics

Jessica Shang, PhD, *Princeton University*
Associate Professor of Mechanical Engineering
Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Mechanical Engineering
Joint Appointment(s): Laboratory for Laser Energetics

Sobhit Singh, PhD, *West Virginia University*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering
Affiliation: Materials Science

Laura Slane, PhD, *University of Wisconsin–Madison*
Associate Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Wenjie Zang, PhD, *National University of Singapore*
Assistant Professor of Mechanical Engineering
Primary Appointment(s): Mechanical Engineering

Admissions

Applying to Doctoral Programs

Your application should reflect your academic preparedness and research experience and enthusiasm. Matching the research interests of our faculty members is a crucial factor in the selection process. Finally, we will also consider an applicant's impact on the diversity of our department.

Required Application Materials

- A full online application
- Personal statement
- Transcripts from each university that you have attended, uploaded to the online application (copies are acceptable for application review; official transcripts are needed if applicant is accepted)
- Optional GRE scores (uploaded)
- TOEFL, IELTS, or Duolingo scores for applicants whose native language is not English
- Three letters of recommendation submitted electronically
- Payment of application fee

Applying to Master's Programs

Required Application Materials

- A full online application
- Personal statement
- Transcripts from each university that you have attended, uploaded to the online application (copies are acceptable for application review; official transcripts are needed if applicant is accepted)
- Optional GRE scores (uploaded)
- TOEFL, IELTS, or Duolingo scores for applicants whose native language is not English
- Three letters of recommendation submitted electronically
- Payment of application fee

Academics

Master's Degrees and Requirements

The MS degree in Mechanical Engineering requires 30 hours of graduate credit. Students are also required to complete a thesis (plan A) or an oral exam (plan B). No more than 10 credits can be transferred from non-matriculated study at Rochester or from an outside institution.

Plan A requires a written dissertation prepared by the student under the supervision of their advisor. Of the 30 required credit hours, this option requires:

- Six to 12 hours of thesis research
- At least 16 hours of courses 400 level or higher
    - At least 12 of these 16 hours must be ME courses

The formal defense of the dissertation takes place after the completion of all coursework, and the student must be registered for the semester in which the defense takes place.

Plan B requires at least 20 hours of formal ME courses, at least 16 of which must be at the 400 level or higher. Reading and research credits cannot be counted toward the 20 required ME credit hours. The maximum number of research credits for this option is six. Plan B students are required to take a comprehensive oral exam at the end of their coursework.

Doctoral Degrees and Requirements

The PhD in mechanical engineering requires 90 hours of graduate credit. Students holding a master of science degree receive 30 credit hours toward the 90 required hours.

Students must take at least 32 hours of coursework at the 400 level or higher, of which at least 24 credit hours should be mechanical engineering courses. The dissertation is typically 30 of the total of 90 credit hours. No more than 10 of these may be transferred from non-matriculated work at Rochester.

There are three examinations during the PhD program:

- Preliminary Exam: at the end of the first full year of academic study
- Qualifying Exam: typically taken at the end of the second or during the third year
- Final Oral Exam of dissertation

GRADUATE COURSE TITLES

ME 400. Applied Boundary Value Probability
ME 402. Partial Differential Equations
ME 404. Computational Methods
ME 407. Advanced Dynamics
ME 410. Opt Fab and Testing Tech
ME 424. Intro to Robust Design & Quality Engineering
ME 427. Aerodynamics
ME 430. Optomechanical System Design
ME 431. Feedback Control of Dynamic Systems
ME 432. Opto-Mechanical
ME 433. Nanoscale Energy Transport and Conversion
ME 434. Introduction to Plasma Physics I
ME 435. Introduction to Plasma Physics II
ME 436. Compressible Flow
ME 437. Incompressible Flow
ME 438. Introduction to Quality Engineering
ME 439. Turbulence
ME 440. Mechanics of Structures
ME 441. Finite Elements
ME 444. Continuum Mechanics
ME 445. Precision Instrument Design
ME 446. Aerospace Structures
ME 449. Elasticity
ME 450. Introduction to Quantum Theory of Materials
ME 451. Characterization Methods in Materials
ME 465. Principles of Lasers
ME 481. Mechanical Behavior of Solids
ME 482. Biosolid Mechanics
ME 488. Computational Methods for High-Energy-Density Physics
ME 494. Master's Internship
ME 495. Master's Research in ME
ME 497. Research Seminar in ME
ME 533. Introduction to Inertial Confinement Fusion
ME 537. Introduction to High-Energy-Density Physics
ME 594. Research Internship
ME 595. PhD Research in ME
ME 897. Master's Dissertation
ME 986V. Full-Time Visiting Student
ME 995. Continuation of Doctoral Enrollment
ME 997. Doctoral Dissertation
ME 999. Doctoral Dissertation

Technical Entrepreneurship and Management (TEAM)

Kris Lantzky-Eaton
Assistant Dean of Graduate Education and Postdoctoral Affairs

Overview

The Master of Science in Technical Entrepreneurship and Management combines a graduate-level technical education at the Hajim School with entrepreneurial management coursework at the Simon School. We recommend that students pursue a different engineering focus from their undergraduate major. TEAM prepares students for industry work in various engineering, analyst, management, and entrepreneurial roles and outfits aspiring entrepreneurs with skills to launch an enterprise. The degree offers various graduate-level courses in one of the following technical concentrations: (1) biomedical engineering, (2) chemical engineering, (3) computer science, (4) data science, (5) electrical and computer engineering, (6) energy and the environment, (7) mechanical engineering, (8) materials science, (9) optics, and (10) custom.

Familiarity with the chosen technical discipline is fostered by an emphasis on critical thinking, creativity, and innovation while immersed in an educational and research environment. Students explore general business topics through an analytical lens, with a focus on organizing and managing resources and leadership. The program exposes students to real-world applications, including the opportunity to commercialize the University of Rochester's patented technologies.

Mission Statement and Strategic Goals

The Ain Center for Entrepreneurship and Innovation aims to equip University of Rochester innovators with an open-minded vision, the ability to take risks, and a passion to change the world for the better. By engaging experienced and enthusiastic individuals, we leverage the insight, expertise, and savvy gained from Advisory Council members to help set and achieve new milestones, and better serve our myriad constituents across the University—students, faculty, staff, and alumni.

http://www.rochester.edu/team

Graduate Faculty Information

Jim Brickley, PhD, *University of Oregon*
Professor
Gleason Professor of Business Administration
Primary Appointment(s): Simon School of Business

Ronald Goettler, PhD, *Yale University*
Professor
Senior Associate Dean for Faculty and Research; James N. Doyle, Sr. Professor of Entrepreneurship
Primary Appointment(s): Simon School of Business

Dennis Kessler, SJD, *Northwestern University*
Professor
Edward and Agnes Ackley Clinical Professor of Entrepreneurship
Primary Appointment(s): Simon School of Business

Mitchell Lovett, PhD, *Duke University*
Professor
Senior Associate Dean of Education and Innovation
Primary Appointment(s): Simon School of Business

David Miller, EdD, *University of Rochester*
Associate Clinical Professor
Associate Director, Center for Learning in the Digital Age
Primary Appointment(s): Warner School of Education

Rachel Roberts, MA, *Harvard University*
Associate Professor
Director, Institute for Music Leadership
Primary Appointment(s): Music Leadership (ESM)

James M. Zavislan, PhD, *University of Rochester*
Professor of Optics, Professor of Biomedical Engineering, Associate Professor of Ophthalmology, Associate Professor in the Center for Visual Science
Primary Appointment(s): Optics
Joint Appointment(s): Biomedical Engineering, Ophthalmology, Center for Visual Science

Academics

Master's Degrees and Requirements

The MS degree requires three core entrepreneurship (TEM) courses, three technical elective courses, one additional technical or entrepreneurship management elective, one semester-long practicum, and a final comprehensive examination consisting of a written business plan and an oral presentation.

GRADUATE COURSE TITLES

TEM 401. Economics, Marketing, and Strategy Primer for Entrepreneurs
TEM 402. Accounting and Finance Primer for Entrepreneurs
TEM 411. General Management of New Ventures
TEM 440. Screening Technical Opportunities
TEM 441. Product Development and Technical Management

The Institute of Optics

Thomas G. Brown
Chair

Gary Wicks and Jennifer Kruschwitz
Directors of Graduate Study

Overview

Founded in 1929, the Institute of Optics was the first optics education program in the nation. It is an academic department within the University of Rochester and grants undergraduate, master's and PhD degrees in optics.

Through rigorous academic instruction, laboratory exercises, informal events, and networking opportunities, faculty and staff at the Institute of Optics are dedicated to providing a challenging and enjoyable educational experience in the broad field of optics. Instruction and research are offered in virtually every phase of optics, including physical optics, opticalinstrumentation and design, quantum optics, laser engineering, signal processing, guided wave optics, nonlinear optics, and optical materials. Well-equipped laboratories allow student thesisresearch in a wide range of areas, including gradient index optics, image processing, integrated optics, dielectric thin films, ultrahigh resolution laser spectroscopy, and high-power laser physics.

http://www.hajim.rochester.edu/optics/

Graduate Faculty Information

Govind Agrawal, PhD, *Physics, Indian Institute of Technology*
Professor of Optics
Dr. James C. Wyant Professor of Optics; Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy, Laboratory for Laser Energetics

Miguel Alonso, PhD, *University of Rochester*
Professor of Optics
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Laboratory for Laser Energetics

Aaron Bauer, PhD, *University of Rochester*
Research Assistant Professor of Optics
Primary Appointment(s): Optics

Julie Bentley, PhD, *University of Rochester*
Professor of Optics
Primary Appointment(s): Optics

Andrew Berger, PhD, *Massachusetts Institute of Technology*
Professor of Optics, Professor of Biomedical Engineering
Primary Appointment(s): Optics
Joint Appointment(s): Biomedical Engineering

Robert Boyd, PhD, *University of California, Berkeley*
Professor Optics, Professor of Physics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Jake Bromage, PhD, *University of Rochester*
Associate Professor of Optics
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Laboratory for Laser Energetics
Joint Appointment(s): Optics

Thomas G. Brown, PhD, *University of Rochester*
Professor of Optics
Director of the Institute of Optics, Mercer Brugler Distinguished Teaching Professor
Primary Appointment(s): Optics

Jaime Cardenas, PhD, *University of Alabama*
Assistant Professor of Optics
Primary Appointment(s): Optics
Joint Appointment(s): Physics & Astronomy
Affiliation: Materials Science

Michele Cotrufo, PhD, *Eindhoven University of Technology*
Assistant Professor of Optics
Primary Appointment(s): Optics

James Fienup, PhD, *Stanford University*
Professor of Electrical and Computer Engineering
Robert E. Hopkins Professor of Optics; Professor, Center for Visual Science; Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Center for Visual Science, Laboratory for Laser Energetics

Michael Giacomelli, PhD, *Duke University*
Assistant Professor of Biomedical Engineering, Assistant Professor of Optics
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Optics

Chunlei Guo, PhD, *University of Connecticut*
Professor of Optics, Professor of Physics
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics, Physics
Joint Appointment(s): Laboratory for Laser Energetics
Affiliation: Materials Science

Wayne Knox, PhD, *University of Rochester*
Professor of Optics, Professor of Physics, Professor of Visual Science, Professor of Materials Science
Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy, Center for Visual Science, Materials Science, Laboratory for Laser Energetics
Affiliation: Materials Science

Jennifer D. T. Kruschwitz, PhD, *Rochester Institute of Technology*
Associate Professor of Optics
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Optics
Joint Appointment(s): Laboratory for Laser Energetics

Qiang Lin, PhD, *University of Rochester*
Associate Professor of Optics, Associate Professor of Electrical and Computer Engineering
Dean's Professor of Electrical and Computer Engineering
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Optics

John Marciante, PhD, *University of Rochester*
Associate Professor of Optics
Primary Appointment(s): Optics

Susana Marcos, PhD, *University of Salamanca*
Professor of Optics
David R. Williams Director of the Center for Visual Science, Nicholas George Endowed Professor in Optics
Primary Appointment(s): Optics, Center for Visual Science

Benjamin L. Miller, PhD, *Stanford University*
Professor of Biomedical Engineering, Professor of Optics, Professor of Biochemistry and Biophysics
Dean's Professor of Dermatology
Primary Appointment(s): Dermatology, School of Medicine and Dentistry
Joint Appointment(s): Optics, Biomedical Engineering
Affiliation: Materials Science

Eileen Otte, PhD, *University of Münster & University of Witwatersrand*
Assistant Professor of Optics
Primary Appointment(s): Optics

John Palastro, PhD, *University of Maryland*
Associate Professor of Optics, Assistant Professor of Mechanical Engineering
Senior Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Laboratory for Laser Energetics
Joint Appointment(s): Optics

Pablo Postigo Resa, PhD, *Polytechnic University of Madrid*
Professor of Optics
Primary Appointment(s): Optics

William Renninger, PhD, *Cornell University*
Associate Professor of Optics, Associate Professor of Physics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy

Jannick Rolland, PhD, *University of Arizona*
Professor of Optics, Professor of Biomedical Engineering
Brian J. Thompson Professor of Optical Engineering, Professor in the Center for Visual Science
Primary Appointment(s): Optics
Joint Appointment(s): Center for Visual Science

Greg Schmidt, PhD, *University of Rochester*
Assistant Professor of Optics
Primary Appointment(s): Optics

Nick Vamivakas, PhD, *Boston University*
Professor of Optics, Professor of Physics
Dean of Graduate Education and Postdoctoral Affairs for the School of Arts & Sciences and the Hajim School of Engineering & Applied Sciences
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy
Affiliation: Materials Science

Gary W. Wicks, PhD, *Cornell University*
Professor of Optics
Primary Appointment(s): Optics
Affiliation: Materials Science

David R. Williams, PhD, *University of California, San Diego*
Professor of Optics, Professor of Brain and Cognitive Sciences, Professor of Ophthalmology, Professor of Biomedical Engineering
William G. Allyn Professor of Medical Optics
Primary Appointment(s): Optics
Joint Appointment(s): Ophthalmology, Brain and Cognitive Sciences

James M. Zavislan, PhD, *University of Rochester*
Professor
Professor of Optics, Professor of Biomedical Engineering, Professor of Ophthalmology, Associate Professor in the Center for Visual Science
Primary Appointment(s): Optics
Joint Appointment(s): Biomedical Engineering, Ophthalmology, Center for Visual Science

Xi-Cheng Zhang, PhD, *Brown University*
Professor
Professor of M. Parker Givens Professor of Optics, Professor of Physics
Primary Appointment(s): Optics
Joint Appointment(s): Physics and Astronomy

Jonathan Zuegel, PhD, *University of Rochester*
Professor of Optics
Director, Laser & Materials Testing Division; Distinguished Scientist, Laboratory for Laser Energetics
Primary Appointment(s): Laboratory for Laser Energetics
Joint Appointment(s): Optics

Admissions

Applying to Doctoral Programs

All applicants must complete an application in the University of Rochester AS&E Graduate Applications portal and provide the following:

- Statement of purpose
- Curriculum Vitae or detailed resume
- At least three letters of recommendation
- Transcript from bachelor's degree program (with proof of conferral for completed degrees)
- Proof of English proficiency (TOEFL or IELTS) for international applicants who did not complete a four-year degree at an English-speaking institution

Admission is decided by the graduate admissions committee rather than by a potential research supervisor. Only after being admitted and then completing two semesters of courses do students join a research group. Therefore, applications should not be directed to individual faculty members, but submitted according to the instructions in the portal. Our Optics PhD program is appropriate for students of various STEM backgrounds, with many students coming from physics, electrical engineering, mechanical engineering, and biomedical engineering bachelor's programs. A previous degree in optics is not required.

Applying to Master's Programs

All tracks for the Optics MS program (including HOME) use the same Optics MS application. The MS Track selection indicated on the application is not binding, and students may change their MS track after enrollment. All applicants must complete their application in the University of Rochester AS&E Graduate Applications portal and provide the following:

- Statement of purpose
- Curriculum vitae or detailed resume
- At least three letters of recommendation
- Transcript from bachelor's degree program (with proof of conferral for completed degrees)
- Proof of English proficiency (TOEFL or IELTS) for international applicants who did not complete a four-year degree at an English-speaking institution

Our Optics MS program is appropriate for students of various STEM backgrounds, with many students coming from physics, electrical engineering, mechanical engineering, and biomedical engineering bachelor's programs. A previous degree in optics is not required.

Academics

Master's Degrees and Requirements

The Optics MS program is available as an in-person program for students in residence at the University of Rochester, and as a primarily remote program, the Hybrid Optics Master's Education (HOME). The HOME program is designed for working professionals and allows MS students to take all courses, except for one optics laboratory course, remotely. The HOME program has no residence requirement and cannot be used to request an F-1 visa for study from within the United States.

All Optics MS students (HOME and in person) must select one of two MS tracks:

Plan A – Thesis: Core coursework + research study + final oral defense of thesis

Plan B – Coursework: Core course + elective coursework + final essay

All Optics MS students complete core coursework in the areas of laboratory skills, modern optical systems, wave optics and imaging, and optical radiation and detection. The Optics MS core courses ensure that all students receive a solid foundation in optics regardless of their academic background.

Both Plan A and Plan B students have the option for in-person or HOME program study. Our Optics MS students may also take MS internships as part of the program, including year-long co-ops starting during the second semester of study.

Doctoral Degrees and Requirements

The Optics PhD program is designed to prepare graduates to carry out independent, creative research in an industrial, academic, or government setting. The Optics PhD program is a combination of research, coursework, teaching assistantships, and thesis work that students complete over four or more years.

The first two semesters of PhD study focus on courses, with seven core courses and one elective, followed by a preliminary examination in the summer after the first year of study. Following that exam, students begin research duties. Subsequent years of PhD study include the completion of additional elective courses and research toward the completion of the PhD thesis, which is presented in an oral defense as the final requirement of the PhD program.

Optics PhD students are required to serve as a teaching assistant for two courses. Additional teaching assistant positions may be taken voluntarily for pay. PhD students may also take internships with the approval of their research advisors. Some students also complete research at outside institutions, including research universities and national laboratories. We highly encourage collaboration, and Optics PhD students frequently work in laboratories in the Laboratory for Laser Energetics, the Center for Visual Science, and other University of Rochester facilities.

GRADUATE COURSE TITLES

OPT 401. HOME First Laboratory
OPT 402. HOME Second Laboratory
OPT 403. HOME Third Laboratory

OPT 407. SEM Practicum
OPT 410. Introduction to Augmented and Virtual Reality
OPT 411. Mathematical Methods for Optics
OPT 412. Quantum Mechanics for Optics
OPT 413. Introduction to Random Processes
OPT 414. Detection & Estimation
OPT 420. Introduction to Illumination
OPT 421. Optical Properties of Materials
OPT 422. Color Technology
OPT 423. Detection of Optical Radiation
OPT 425. Radiation & Detectors
OPT 427. Liquid Crystal Materials
OPT 428. Optical Communications
OPT 429. Chemical Bonds: From Molecules to Matter
OPT 430: Mechanics for Optical Engineers
OPT 432. Opto-Mechanical Systems
OPT 433. Optical Fabrication and Testing Technology
OPT 438. Selected Topics in Augmented and Virtual Reality
OPT 440. Freeform Optics
OPT 441. Geometrical Optics
OPT 442. Instrumental Optics
OPT 443. Foundations of Modern Optical Systems
OPT 444. Lens Design
OPT 445. Precision Instrument Design
OPT 446. Optical Interference Coating
OPT 447. Advanced Optical Coatings
OPT 448. Vision and the Eye
OPT 449. Introduction to Illumination
OPT 450. Polarization
OPT 452. Medical Imaging Theory & Implementation
OPT 453. Advanced Quantum & Nano Optics Laboratory
OPT 454. Optics Laboratory for HOME Program
OPT 456. Optics Laboratory
OPT 461. Fourier Optics
OPT 462. Electromagnetic Waves
OPT 463. Wave Optics & Imaging
OPT 464. Nanophotonics & Nanomechanical Devices
OPT 465. Principles of Lasers
OPT 466. Ultrafast Optics and Laser Fundamentals
OPT 467. Nonlinear Optics
OPT 468. Integrated Photonics
OPT 470. Gradient Index GRIN Lens Design
OPT 472. Advanced Biomedical Microscopy
OPT 473. Laser Engineering
OPT 476. Biomedical Optics
OPT 477: Structured Light & Singular Optics
OPT 478. THz Technology and Applications
OPT 481. Technical Entrepreneurship
OPT 482. System & Product Development
OPT 483. Computational Imaging
OPT 484. Petawatt Lasers
OPT 485. Proposal Writing in Vision Science & Optics
OPT 486. Innovation: IP Strategy
OPT 489. The Retina-Brain Interface
OPT 491. MS Reading Course in Optics
OPT 492. Special Topics in Optics
OPT 494. MS Internship in Optics
OPT 495. MS Research in Optics
OPT 501. Quantum Mechanics I
OPT 502. Quantum Mechanics II
OPT 503. Practicum in Augmented and Virtual Reality
OPT 507. SEM Practicum
OPT 511. Advanced Mathematical Methods in Optics
OPT 516. Inverse Problems in Optics
OPT 535. Modern Coherence Theory
OPT 544. Advanced Lens Design
OPT 591. PhD Reading Course in Optics
OPT 594. PhD Internship in Optics
OPT 595. PhD Research in Optics
OPT 894. MS Co-op in Optics

Eastman Institute for Oral Health

Administrative Officers

Eli Eliav
Program Director

Jack Caton
Program Director

A. Basir Barmak
Program Director

Mission Statement

The mission of the Master of Science in Dental Sciences: Clinical and Translational Sciences program is to train dental clinicians to think critically, enabling them to readily apply research skills and knowledge to improve health outcomes for patients and to pursue research activities and academic careers.

Strategic Goals

The program aims to develop well-rounded, research-oriented dental clinicians who can lead both clinical practice and academic endeavors effectively. Key objectives include:

- **Critical Thinking and Research Skills:** Equip dental clinicians with the ability to think critically, enabling them to apply research knowledge and skills to improve patient health outcomes and address clinical challenges.
- **Clinical and Translational Research Competence:** Provide trainees with the necessary training to lead clinical studies, translating scientific discoveries into clinical applications and integrating clinical practices into innovative research.
- **Tailored Educational Pathways**: Allow trainees to work closely with advisors to design a program of study that aligns with their specific research interests, career aspirations, and clinical expertise.
- **Expertise in Clinical Research:** Train trainees in the essential skills required for conducting clinical research, supported by a broad array of core and elective courses that offer foundational concepts and theories consistent with each student's professional goals.
- **Academic and Professional Advancement:** Prepare graduates for academic careers by providing them with the research skills, methodologies, and knowledge necessary to contribute to the dental research community and educate future generations of dental professionals.
- **Original Research and Scholarly Contribution:** Ensure trainees complete a written thesis and final oral examination, demonstrating their ability to conduct original research that contributes valuable new knowledge to the field of dental sciences.
- **Lifelong Learning and Innovation:** Encourage graduates to engage in continuous learning, applying evidence-based practices and fostering innovation to improve patient care and advance the field of dentistry.

www.urmc.rochester.edu/dentistry/education/masters

Graduate Faculty Information

Nisreen Al Jallad, DDS, *Damascus University;* MS, *University of Rochester*
Assistant Professor
Primary Appointment: Dentistry

Furqan Alwaely, BDS, *Baghdad University;* MS, *University of Rochester*
Assistant Professor of Clinical
Primary Appointment: Dentistry

Nasser Assery, BDS, *Riyadh Elm University;* MS, *University of Rochester*
Assistant Professor of Clinical
Clinical Director, Periodontology
Primary Appointment: Dentistry

Basir Barmak, MD, *Kabul Medical University;* EdD, *University of Rochester*
Associate Professor
Primary Appointment(s): Dentistry

Jack Caton, DDS, *University of California, San Francisco*
Professor
Primary Appointment(s): Dentistry

Konstantinos Chochlidakis, DDS, *National and Kapodistrian University of Athens;* MS, *University of Rochester*
Professor
Program Director, Prosthodontics
Primary Appointment(s): Dentistry

Shasha Cui, EDD, *University of Rochester;* MBA, *Rutgers University;* MA, *George Washington University*
Assistant Professor
Primary Appointment: Dentistry

Eli Eliav, DMD, PhD, *Hadassah Medical School*
Professor
Chair, Department of Dentistry, School of Medicine and Dentistry; Director, Eastman Institute for Oral Health; Vice President for Oral Health, Office of VP for Health Sciences (URMC); Vice Dean for Oral Health, Dean's Office, School of Medicine and Dentistry Primary
Primary Appointment(s): Dentistry

Carlo Ercoli, DDS, *Universita Degli Studi di Siena;* MBA, *University of Rochester*
Professor
Chair, Prosthodontics
Primary Appointment(s): Dentistry

Sangeeta Gajendra, DDS, *A.B. Shetty Memorial Institute of Dental Sciences;* MPH, *University of Illinois at Chicago*
Professor of Clinical
Clinical Chief, Community Dentistry
Primary Appointment: Dentistry
Joint Appointment(s): Center for Community Health and Prevention

Junad Khan, BDS, *Liaquat Medical College;* MS, MPH, PhD, *UM New Jersey Dental School*
Associate Professor
Primary Appointment(s): Dentistry
Joint Appointment(s): Neurology, Physical Medicine and Rehabilitation

Dorota Kopycka-Kedzierawski, DDS, *Medical University of Lublin;* MPH, *University of Rochester*
Professor
Director, EIOH Clinical & Translational Research Core
Primary Appointment(s): Dentistry

Elli Anna Kotsailidi, DDS, *National and Kapodistrian University of Athens; MS, University of Rochester*
Assistant Professor of Clinical
Program Director, Periodontology
Primary Appointment: Dentistry

Hans Malmstrom, DDS, *University of Gotenborg*
Professor
Chair, General Dentistry
Primary Appointment(s): Dentistry

Isamar Rivera Ramos, DMD, *University of Puerto Rico; PhD, University of Rochester*
Associate Professor of Clinical
Program Director, Pediatric Dentistry
Primary Appointment: Dentistry
Joint Appointment(s): Pediatrics

Linda Rasubala, DDS, *University of Indonesia; PhD, Kyushu University*
Professor of Clinical
Associate Director, Howitt Urgent Dental Care
Primary Appointment: Dentistry

Yanfang Ren, DDS, *Beijing Medical University*
Professor
Chair, Oral & Maxillofacial Diagnostic Sciences
Primary Appointment(s): Dentistry

Alexandra Tsigarida, DDS, *National and Kapodistrian University of Athens*
Professor
Chair, Periodontology
Primary Appointment(s): Dentistry

Cynthia Wong, DDM, *University of Montreal*
Professor of Clinical Dentistry
Chair, Pediatric Dentistry
Primary Appointment(s): Dentistry
Joint Appointment(s): Pediatrics

Jin Xiao, DDS, PhD, *West China College of Stomatology*
Professor
Director, Perinatal Oral Health
Primary Appointment(s): Dentistry

Dongxia Ye, BDS, *Jilin University;* PhD, *Shanghai Jiao Tong University;* MS, *University of Rochester*
Assistant Professor
Site Director, Eastman Dental at School 17
Primary Appointment: Dentistry

Admissions

A comprehensive application is required to assess each candidate's academic and professional readiness. Applicants must submit an online application with a nonrefundable $195 fee, official transcripts from all post-secondary institutions, a CV or resume, and a personal statement outlining their goals and motivations. Three letters of recommendation are required, including one from a faculty member at the most recent institution attended (unless the applicant has been out of school for over four years). International applicants must provide proof of English proficiency (TOEFL). While GRE scores are not required, they are encouraged. A minimum undergraduate GPA of 3.25 is recommended for competitive consideration.

Academics

Master's Degrees and Requirements

The Master of Science program offers a rigorous curriculum, requiring a minimum of 20 didactic credits and 12 research credits, for a total of 32 credits. Individual programs of study and research should be developed by the student in close collaboration with their advisor.

GRADUATE COURSE TITLES

DEN 419. Dental Research Seminar
DEN 420. Biology of the Periodontium
DEN 426. Fundamentals of Dental Caries
DEN 430. Introduction to Biostatistics
DEN 431. Designing Clinical Research
DEN 433. Biostatistics Software SAS
DEN 434. Systematic Review
DEN 435. Systematic Review and Meta-analysis Software
DEN 436. Research Methods
DEN 446. Practical Skills for Conducting Clinical and Translational Study in Oral Health I
DEN 447. Practical Skills for Conducting Clinical and Translational Study in Oral Health II
IND 501. Ethics and Professional Integrity in Research
DEN 495. Master's Research

Eastman School of Music

Administrative Officers

Kate Sheeran
Joan and Martin Messinger Dean

John Hain
Senior Associate Dean of Academic and Student Affairs

Reinhild Steingröver
Associate Dean of Faculty Affairs

Matthew Ardizzone
Associate Dean of Graduate Studies

Committee on Graduate Studies

Graduate Research Committee

The GRC is chaired by the associate dean of graduate studies, and is responsible for master of arts and doctor of philosophy curricula. Voting members include a representative from each department offering the MA and/or PhD: Music Theory, Musicology, Music Teaching and Learning, Music Leadership, and Composition, and one representative from the Performance area. *Ex officio* members include the dean of the school, the registrar, and the associate director of graduate advising.

Graduate Professional Committee

The GPC is chaired by the associate dean of graduate studies and is responsible for master of music and doctor of musical arts curricula. Voting members include a representative from each area/department offering the MM and/or DMA: Piano, Strings/Harp/Guitar, Jazz, Voice, Winds/Brass/Percussion, Organ, Conducting and Ensembles, Music Teaching and Learning, Composition, as well as a representative from the Theory, Musicology, and Humanities departments. *Ex officio* members include the dean of the school, the registrar, and the associate director of graduate advising.

School Mission Statement

The Eastman School of Music strives:

- To create a musical community that is rich with cultural, social, and intellectual diversity
- To give students an intensive professional education in their musical disciplines
- To prepare students with a solid foundation in music and an expansive education in the liberal arts
- To develop informed and inquiring minds that enable each graduate to engage the fundamental issues of their art and to become effective cultural leaders in society
- And, through its community and continuing education programs, to offer the highest quality music instruction and performance opportunities for students of all ages.

School-Level Scholarships and Assistantships

The Eastman School of Music provides financial support to its graduate students primarily through graduate scholarships and assistantships. Where applicable, assistantships provide in-depth professional training for graduate students, and the school receives valuable services in return. While virtually all students receive a scholarship, some students may be qualified for and assigned assistantships as well. Should a student receive both a tuition scholarship and a stipend, they must be connected (a student may not accept the scholarship and decline the stipend). Scholarships range from one to two units to full tuition; stipends are largely based on the number of hours of work assigned, and are paid in biweekly or twice monthly installments and are taxable. PhD and DMA conducting students generally receive full tuition scholarships and stipends that reflect their research and teaching demands. Admission to a graduate program does not guarantee either a scholarship or an assistantship.

Composition

Ricardo Zohn Muldoon
Chair

Overview

The Eastman Composition Department is devoted to teaching students who wish to pursue a professional and/or academic career in concert and computer music composition. Our programs equip students with a thorough knowledge of all contemporary forms of musical expression and the ability to present their personal style in each of them.

Mission Statement and Strategic Goals

We have no stylistic or sectarian agendas; our goal is to help students learn to write the music that inspires and interests them. In order to enable the student to explore the wide range of today's diverse compositional styles and media, it is the policy of the department to rotate the faculty and students so that no student ordinarily studies with the same teacher for more than one year during a period of three years. Accordingly, each member of the faculty teaches students at all levels of experience, from freshman to doctoral students. Composition students at Eastman have many opportunities to hear their works presented in a variety of performance settings. There are many built-in opportunities in the program, such as the Composers Forum, Composers Sinfonietta, Orchestra, Wind Ensemble, and choral readings, as well as vast possibilities afforded by the intense concert life of the school, including concerts sponsored by the student-run new-music organization Ossia, student recitals, school ensemble concerts, and much more. Thanks to this wealth of performance resources, students can pursue those compositional projects that best meet their individual developmental needs, and thus take control of their artistic path and growth.

https://www.esm.rochester.edu/composition

Graduate Faculty Information

Mikel Kuehn, PhD, *University of Rochester*
Professor of Composition
Primary Appointment(s): Composition

Elizabeth Ogonek, PhD, *Guildhall School of Music and Drama*
Associate Professor of Composition
Primary Appointment(s): Composition

Daniel Pesca, DMA, *University of Rochester*
Assistant Professor of Composition
Primary Appointment(s): Composition

Evis Sammoutis, PhD, *University of York*
Associate Professor of Composition
Primary Appointment(s): Composition

Ricardo Zohn-Muldoon, PhD, *Pennsylvania State University*
Professor of Composition
Department Chair
Primary Appointment(s): Composition

Admissions

Applying to Doctoral Programs

The Department of Composition offers two doctoral degrees: the Doctor of Philosophy and the Doctor of Musical Arts. DMA applicants should demonstrate a high level of achievement on their major instrument or voice through an audition and will study their instrument as part of their degree. .

PhD Admission Requirements

- Online application
- Interview
- Personal statement and resume
- Three recommendations
- One music research paper
- Transcripts (all collegiate study)
- Portfolio (scores and recordings of three to four representative works)

Doctor of Musical Arts Admission Requirements

- Online application
- Interview
- Personal statement and resume
- Three recommendations
- One music research paper
- Transcripts (all collegiate study)
- Portfolio (scores and recordings of three to four representative works)
- Audition (many applied areas also require a prescreening recording)

Applying to Master's Programs

The Department of Composition offers two master's degrees: the Master of Music and the Master of Arts. The MM is a performance-based degree, and the MA is a research degree. Both degrees require an interview; the MM also requires an audition.

Master of Arts in Composition Admission Requirements

- Online application
- Interview
- Personal statement and resume
- Three recommendations
- One music research paper
- Transcripts (all collegiate study)
- Portfolio (scores and recordings of three to four representative works)

Master of Music in Composition Admission Requirements

- Online application
- Interview
- Personal statement and resume
- Three recommendations
- Transcripts (all collegiate study)
- Portfolio (scores and recordings of three to four representative works)
- Audition (many applied areas also require a prescreening recording)

Academics

Master's Degrees and Requirements

The Master of Arts in Composition is a 34-unit degree designed to be completed in two years. Individual composition tutorials (one hour per week) provide the core of the program. In addition, students take courses in computer music techniques, compositional practice circa 1925 to 1955, and music electives, in addition to the MA thesis and the comprehensive review (a 30-minute lecture on their own music and progress toward the degree). More information on the MA in Composition is here: : https://www.esm.rochester.edu/registrar/policy/07-00/#07.02.04.

The Master of Music in Composition is a 32-unit degree designed to be completed in two years. Individual composition tutorials (one hour per week) provide the core of the program. In addition, students take courses in applied music (two semesters), compositional practice circa 1925 to 1955, and music electives, in addition to the MM thesis and the comprehensive review (a 30-minute lecture on their own music and progress toward the degree). They also perform a recital on the major instrument, with at least one work not composed by the student. More information on the MM in Composition is here: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.05.

Doctoral Degrees and Requirements

The DMA in Composition is designed for students who are highly accomplished performers and composers, who wish to study both disciplines. Individual composition tutorials (one hour per week) provide the core of the program, in addition to applied study of the major instrument (three semesters minimum). In addition, students take four research and writing seminars (three in music history, one in composition), three theory or compositional practice courses, electives (or a minor), and the DMA dissertation project. Performance requirements include a jury and two doctoral recitals. The degree culminates with the comprehensive examinations. For more information, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.09.

The PhD in Composition is awarded for completion of scholarly and creative research satisfactorily defended in a dissertation. Individual composition tutorials (one hour per week) provide the core of the program, in addition to coursework in compositional practice, computer music techniques, doctoral seminars, two theory courses, electives, and the capstone project. The degree culminates in the comprehensive examinations and the dissertation (a large-scale composition and substantial analytical essay). For more information on the PhD in composition, see: https://www.esm.rochester.edu/registrar/policy/07-00/#07.03.08.

GRADUATE COURSE TITLES

CMP 401. Advanced Composition I
CMP 402. Advanced Composition II
CMP 412. Compositional Practice circa 1925–1955
CMP 413. Compositional Practice circa 1955–1980
CMP 421. Advanced Computer Music Techniques I
CMP 422. Advanced Computer Music Techniques II
CMP 496. MM Thesis
ESM 460. Composition Comprehensive Review
CMP 501. Advanced Composition III
CMP 502. Advanced Composition IV
CMP 591/592. Composition Research Seminar
CMP 413. Compositional Practice circa 1955–1980
CMP 596. DMA Dissertation Project

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Conducting and Ensembles

William Weinert
Chair

Overview

Of the more than 800 performances presented each year by the Eastman School, a great many are by Eastman's superb student ensembles. Membership in large ensembles is critical to professional development and is a required part of both the graduate and undergraduate curricula. Instrumentalists participate in the Eastman School Symphony Orchestra, Philharmonia, Wind Ensemble, Collegium Musicum and Musica Nova. Vocal ensembles include Repertory Singers, Chorale, Eastman-Rochester Chorus, Treble Chorus, and Collegium Musicum.

Eastman offers the master's and doctoral degrees in conducting, with four tracks in conducting choral, orchestral, wind, and contemporary ensembles. Each track offers ample podium time and comprehensive training in gesture and rehearsal technique, repertoire, programming, performance practice, and ear-training. Graduates of Eastman's conducting programs serve directors of professional ensembles and outstanding academic programs around the world. Eastman's conducting faculty have worldwide reputations and are in frequent demand for appearances throughout North America, Europe, and Asia.

Mission Statement and Strategic Goals

The mission of the Conducting and Ensembles Department is to prepare young musicians for an enriching life in the music profession by performing ensemble music at the highest professional level, and in a broad range of styles. Our goals are to continue the development of the highest level of performance in every Eastman ensemble, and to continue setting the world standard in the training of professional conductors.

https://www.esm.rochester.edu/ensembles

Graduate Faculty Information

Brad Lubman, MM, *SUNY Stony Brook*
Professor of Conducting and Ensembles
Primary Appointment(s): Conducting and Ensembles

Mark Scatterday, DMA, *University of Rochester*
Professor of Conducting and Ensembles
Primary Appointment(s): Conducting and Ensembles

Neil Varon, MM, *Juilliard School of Music*
Professor of Conducting and Ensembles
Primary Appointment(s): Conducting and Ensembles

William Weinert, DMA, *University of Wisconsin*
Professor of Conducting and Ensembles
Department Chair
Primary Appointment(s): Conducting and Ensembles

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts in Conducting Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- 3 recommendation letters
- A prescreening recording and audition

Applying to Master's Programs

Master of Music in Conducting Admission Requirements

- Online application
- A personal statement
- A resume or CV
- 3 recommendation letters
- A prescreening recording and audition

Academics

Master's Degrees and Requirements

The Master of Music in Conducting is a 33-unit degree completed over two years. Coursework includes conducting study, three music history courses, a theory course, ensemble participation, electives, and a degree recital. The degree culminates with an oral examination. Specific tracks are offered in choral, orchestral, wind, and contemporary ensemble conducting. Choral and orchestral conductors must demonstrate a language proficiency; choral conductors also demonstrate lyric diction proficiency. For more complete information about the MM in Conducting, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.06.

Doctoral Degrees and Requirements

The Doctor of Musical Arts in conducting is a 60-unit degree, typically completed over the course of two years. The degree is designed for candidates with significant professional experience as performers and conductors. A feature of the program is regular tutorial sessions in conjunction with contact with the School's ensembles. Beyond conducting studies, other coursework includes four doctoral research and writing seminars, three theory courses, and electives or a minor. For choral and orchestral conducting students, there is a foreign language proficiency requirement. All students will present one or more public performances and a lecture-recital. The degree culminates with the

doctoral comprehensive examinations. For more information on the DMA in Conducting, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.10.

GRADUATE COURSE TITLES

CND 415-416. Advanced Instrumental Conducting I-II
CND 423-424. Advanced Conducting: Choral I-II
CND 431-432. Choral Literature I-II
CND 441-444. Colloquy in Conducting
CND 451-452. Contemporary Repertoire I-II
CND 481-484. Orchestral Conducting I-IV
CND 541-444. DMA Conducting I-IV

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Contemporary Media and Film Composition

Mark Watters
Director, Beal Institute for Film Music and Contemporary Media

Overview

The Beal Institute for Film Music and Contemporary Media at the Eastman School of Music provides students with instruction and experiences that prepare them for the increasingly evolving opportunities to compose, produce, record, and perform music for film and contemporary media. Founded in 2016 by Emmy Award-winning composer Jeff Beal ('85E) and vocalist Joan Beal ('84E), and under the direction of Mark Watters, an Emmy-winning composer and conductor, the program builds on the film legacy of Eastman's founder, George Eastman.

Mission Statement and Strategic Goals

The Institute provides students with instruction and opportunities that prepare them for evolving demands in the professional world. Students compose for more than a dozen recording sessions and live performances that feature superb Eastman instrumentalists. In addition to numerous recording sessions, the annual departmental recital, Visual Music, features all of the second-year students conducting their compositions live-to-picture.

Beal Institute students have opportunities to work with established visiting artists: professionals actively engaged in composing, producing, orchestrating, and/or conducting for film and other contemporary media. Students also collaborate on cross-disciplinary and multimedia projects with fellow Eastman students and faculty members from the humanities, composition, and other departments. There are also opportunities to work with community arts organizations and universities, such as Rochester Institute of Technology's world-renowned film, animation, and video game-developing schools. The Institute enhances the graduate degree program in contemporary media and film composition.

https://www.esm.rochester.edu/bealinstitute/

Graduate Faculty Information

Mark Watters, BM, *University of Southern California*
Associate Professor
Program Director
Primary Appointment(s): Jazz Studies and Contemporary Media
Joint Appointment(s): Beal Institute for Film Music and Contemporary Media

Admissions

Applying to Master's Programs

Master of Music in Contemporary Media and Film Composition Admission Requirements

- Online application
- A personal statement
- A resume or CV
- Three recommendation letters
- Portfolio of scores and recordings
- Interview

Academics

Master's Degrees and Requirements

The Master of Music in Contemporary Media and Film Composition degree requires 36 units for completion. Students are in residence for two academic years and complete coursework within the department and in other departments of the Eastman School.

GRADUATE COURSE TITLES

JCM 433-434. Film Scoring Techniques I-II
JCM 435. Arranging for the Recording Studio
JCM 436. Video Game Scoring
JCM 454. Contemporary Styles Composition
JCM 455. Composing for Digital Media
JCM 456. Advanced Performance Projects – Contemporary Media
JCM 475-476. Writing Projects – Contemporary Media
JCM 491-492. Media Composition Forum

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Early Music

Paul O'Dette
Program Director

Overview

The Eastman Early Music Program provides instruction and performance opportunities on a wide range of Renaissance and Baroque instruments and voices for both graduate and undergraduate students. Performing ensembles include a vocal ensemble, Baroque Orchestra, and Baroque chamber ensembles, including a viola da gamba consort. The ensembles present regular concerts at Eastman, as well as at festivals such as the Rochester Early Music Festival and the fringe of the Boston Early Music Festival. Instruction is available for many Baroque instruments, including lute, harpsichord, viola da gamba, Baroque violin, Baroque oboe, natural trumpet, and natural horn. An MM and a DMA in early music performance is available for many of these instruments. In addition to ensembles and applied instruction, the program offers classes in Baroque performance practice, basso continuo playing, lute literature and pedagogy, harpsichord literature and pedagogy, and a vast array of topics for independent study projects tailored to the interests of individual students.

Mission Statement and Strategic Goals

The mission of the Early Music Program is to train the next generation of outstanding performers of early music. At the heart of this mission is the belief that historical performance practice encourages individual artistic expression informed by stylistic parameters. This requires combining excellent performance skills with rigorous scholarship to understand how the application of historical performance practices can inspire the most vibrant and expressive music making. The training we provide aims to prepare the students for successful careers as performers and teachers.

https://www.esm.rochester.edu/ensembles/early/

Graduate Faculty Information

Paul O'Dette
Professor of Lute
Program Director
Primary Appointment(s): Strings, Harp, and Guitar
Joint Appointment(s): Conducting and Ensembles

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- An audition on the major instrument
- 3 recommendation letters

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement
- A resume or CV
- An audition on the major instrument
- 3 recommendation letters

Academics

Advanced Certificates and Requirements

There are two certificates offered for current Eastman graduate students pursuing another degree who wish to concentrate on early music:

- Certificate of Advanced Achievement in Early Music: https://www.esm.rochester.edu/certificates/early-music/
- Certificate of Achievement in Performance Practice: https://www.esm.rochester.edu/certificates/performance-practice/

Master's Degrees and Requirements

The Master of Music in Early Music (emphasis in historical plucked instruments) is intended for students with an undergraduate degree in a performance background who wish to focus on the performance styles of the Renaissance and Baroque periods. The 35-unit degree includes 12 units of applied study of the major instrument (typically lessons in lute or harpsichord), music history courses, including Music in the Renaissance and Music in the Baroque, Issues in Performance Practice and Baroque Performance Practice, Counterpoint, pedagogy/literature courses (specific to either lute or harpsichord), continuo study, ensemble participation (Collegium Musicum), and a degree recital. The degree culminates in an oral examination.

Doctoral Degrees and Requirements

The Doctor of Musical Arts in Early Music (emphasis on historical plucked instruments) requires an audition demonstrating high achievement in performance, specifically in early styles. The 60-unit degree includes 20 to 24 units of applied study of the major instrument (typically lute or harpsichord), four research and writing seminars, three theory courses, electives (or a minor), a jury, and three degree recitals (one solo, one collaborative, and a lecture-recital). Students must also demonstrate proficiency in a foreign language. The degree culminates with the comprehensive examinations. For more complete information, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.11

GRADUATE COURSE TITLES

430A. Primary Lessons (1/2 time)
460A. Primary Lessons

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Jazz Studies and Contemporary Media

Jeffrey Campbell
Chair

Overview

The strength of Eastman's Jazz Studies and Contemporary Media degree program lies in the hard work expected of each student in every aspect of study, coupled with the individual attention received from faculty. The sheer scope of material covered in the curriculum sustains the discipline level, while the faculty members as mentors provide personal encouragement as they coach the necessary skills.

Mission Statement and Strategic Goals

Our mission is to prepare today's most talented jazz students for their future roles in public performance, media, and education. We provide a comprehensive jazz curriculum that spans the great traditions of the past to the cutting-edge developments of the present. Each student discovers their artistic voice as a performer, composer, arranger, and/or teacher. We provide local, national, and international educational constituencies and their audiences with world-class performances of jazz and contemporary media music.

Eastman's JCM students have the opportunity to obtain the most comprehensive education in jazz available today. The Eastman JCM curriculum has been designed and modified over the years to enable all students—both performance and writing skills majors—to become professional-caliber musicians who are comfortable within the large sphere of jazz-based musical styles, and who are capable of creating their own strong voice in any musical setting. The faculty believes that the way to accomplish this is to expose students to the classical and jazz traditions, with emphasis on the repertoire and disciplines associated with the learning of improvisation skills.

https://www.esm.rochester.edu/jazz

Graduate Faculty Information

Otis Brown III, MM, *The New School*
Assistant Professor of Jazz Studies and Contemporary Media
Primary Appointment(s): Jazz Studies and Contemporary Media

Jeffrey Campbell, DMA, *University of Rochester*
Professor of Jazz Studies and Contemporary Media
Department Chair
Primary Appointment(s): Jazz Studies and Contemporary Media

Sara Gazarek, BS, *University of Southern California*
Associate Professor of Jazz Voice
Primary Appointment(s): Jazz Studies and Contemporary Media

Marshall Gilkes, Artist Diploma, *Julliard*
Associate Professor of Jazz Studies and Contemporary Media
Primary Appointment(s): Jazz Studies and Contemporary Media

Clay Jenkins, MM, *University of Southern California*
Professor of Jazz Studies and Contemporary Media
Primary Appointment(s): Jazz Studies and Contemporary Media

Christine Jensen, MM, *McGill University*
Assistant Professor of Jazz Studies and Contemporary Media
Primary Appointment(s): Jazz Studies and Contemporary Media

Dariusz Terefenko, PhD, *University of Rochester*
Professor of Jazz Studies and Contemporary Media
Primary Appointment(s): Jazz Studies and Contemporary Media

Gary Versace, MM, *University of Rochester*
Associate Professor of Jazz Studies and Contemporary Media, Associate Professor of Piano
Primary Appointment(s): Jazz Studies and Contemporary Media

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- A prescreening and audition on the major instrument
- Three recommendation letters

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A prescreening and audition on the major instrument
- Three recommendation letters

Applying to Advanced Certificates

Certificate in Performance Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A prescreening and audition on the major instrument
- Three recommendation letters

See https://www.esm.rochester.edu/admissions/grad/ for the most up-to-date application/audition and prescreening requirements.

The JCM department also offers the Certificate of Advanced Achievement in the Art of Improvisation to current Eastman degree students. (This is not a stand-alone certificate.) It is open to Eastman graduate students who want to explore and advance their improvisation skills in a wide array of musical styles. More information is here: https://www.esm.rochester.edu/certificates/art-of-improvisation/.

Academics

Advanced Certificates and Requirements

The Advanced Diploma in Performance is a one-year program (which can be extended) that centers around private instruction on the major instrument, as well as high-level chamber music and ensemble experiences. In addition, students can enroll in practical elective coursework that will supplement their performance study and better prepare them for a career as a professional musician. For each of the two semesters, the core courses are four units of applied music lessons, one unit of ensembles, a one-unit diploma colloquium, and a performance project (completed in the second or final semester of study). For the most up-to-date information, see: https://www.esm.rochester.edu/admissions/grad/adp/.

Master's Degrees and Requirements

The Master of Music degree is a two-year program with strong emphasis on applied instrumental or vocal study and performance as well as broad intellectual development. Prerequisites include demonstrated proficiency on the major instrument or voice and an undergraduate degree in music or its equivalent. Core requirements for jazz majors include 16 units of applied instruction, jazz performance workshops and ensembles, jazz history, pedagogy, jazz forum, electives, and a degree recital. For the most up-to-date course requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.08.

Doctoral Degrees and Requirements

The Doctor of Musical Arts degree is designed to represent high attainment in the practice of music. Prerequisites include demonstration of high achievement in performance through an audition and demonstration of writing ability through submission of a scholarly paper and academic credentials, including transcripts of all previous collegiate-level coursework. The coursework for the degree is typically completed over six semesters (three years), followed by the doctoral comprehensive exam. Core coursework for jazz majors generally includes six semesters of applied study (with performance and writing emphases available), four doctoral seminars, three theory courses, jazz composition/arranging courses, and a minor or electives. In addition, there are two performance recitals and a lecture-recital. The degree culminates in the comprehensive exam: a two-day written exam covering music history and theory, and a final oral exam centered around the student's major instrument and its repertoire, pedagogy, and organology. For the most up-to-date requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.14.

GRADUATE COURSE TITLES

JAZ 430A. Primary Lesson (1/2 time)
JAZ 460A. Primary Lessons
JCM 428. Advanced Jazz Theory Concepts
JCM 429. Advanced Jazz Theory Concepts – Lab
JCM 451-452. Jazz Performance Workshop
JCM 483-484. Advanced Studies in Improvisation
JCM 485-486. Advanced Writing Project
JCM 487-488. Advanced Studies in Jazz Composition
JCM 491-492. Jazz Forum
JCM 501. Jazz Ensemble
JCM 523. Theory/Practice Harmony
JCM 524. Theory/Practice Improvisation
JCM 528. Advanced Jazz Theory Concepts – Lab
JCM 551. DMA Dissertation Project

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Music Teaching and Learning

Alden Snell
Chair

Overview

Our programs serve to prepare students for professional careers as music educators with optional New York State school certification. We believe that each person deserves access to a comprehensive music education, and we prepare students to become articulate leaders, to develop greater understanding of learning and teaching processes, and to develop broad perspectives of music and education in contemporary cultures.

Mission Statement and Strategic Goals

We believe that all individuals have musical potential, and each person deserves access to a comprehensive music education. To more fully realize these ideals, our department prepares students to become articulate leaders, to develop greater understanding of learning and teaching processes, and to develop broad perspectives of music and education in contemporary cultures. Our graduates include successful public and community school music teachers, music professors at major universities, leaders in professional music organizations, and performers of note in venues around the world.

Our mission is consistent with that of the Eastman School and standards articulated by the Interstate New Teacher Assessment and Support Consortium (INTASC), the Association for Advancing Quality in Educator Preparation (AAQEP), the National Association of Schools of Music (NASM), and the New York State Education Department (NYSED). The following standards guide our work:

Music teacher candidates:

- Possess excellent musicianship
- Believe everyone has musical potential
- See musical practices as socially and culturally embedded
- Assess music learning to reach each student
- Use 21st-century technology to foster learning
- Reflect on their practice to develop as professionals.

https://www.esm.rochester.edu/mtl

Graduate Faculty Information

Christopher Azzara, PhD, *University of Rochester*
Professor of Music Teaching and Learning
Eisenhart Professor of Music Teaching and Learning
Primary Appointment(s): Music Teaching and Learning

Lisa Caravan, DMA, *University of Rochester*
Assistant Professor of Music Teaching and Learning
Primary Appointment(s): Music Teaching and Learning

Mara Culp, PhD, *Pennsylvania State University*
Assistant Professor of Music Teaching and Learning
Primary Appointment(s): Music Teaching and Learning

Sangmi Kang, PhD, *University of Florida*
Assistant Professor of Music Teaching and Learning
Primary Appointment(s): Music Teaching and Learning

Philip Silvey, EdD, *University of Illinois, Urbana-Champaign*
Professor of Music Teaching and Learning
Primary Appointment(s): Music Teaching and Learning

Alden Snell, PhD, *University of Rochester*
Associate Professor of Music Teaching and Learning
Department Chair
Primary Appointment(s): Music Teaching and Learning

Admissions

Applying to Doctoral Programs

The Department of Music Teaching and Learning offers two doctoral degrees in music education: the Doctor of Philosophy and the Doctor of Musical Arts. All doctoral applicants should have two to three years of music teaching experience. DMA applicants should demonstrate a high level of achievement on their major instrument or voice through an audition and will study their instrument as part of their degree.

PhD Admission Requirements

- Online application
- Online interview
- Personal statement and resume
- Three recommendations
- One music research paper
- Transcripts (all collegiate study)
- Teaching portfolio

DMA Admission Requirements

- Online application
- Online interview
- Personal statement and resume
- Three recommendations
- One music research paper
- Transcripts (all collegiate study)

- Teaching portfolio
- Audition (many applied areas also require a prescreening recording)

Applying to Master's Programs

The Department of Music Teaching and Learning offers two master's degrees in music education: the Master of Music and the Master of Arts. The MM is a performance-based degree, and the MA is a research degree. Both degrees require an interview; the MM also requires an audition.

Master of Arts Admission Requirements

- Online application
- Interview, including skills assessment
- Personal statement and resume
- Three recommendations
- One music research paper
- Transcripts (all collegiate study)
- Music education essay

Master of Music Admission Requirements

- Online application
- Interview, including skills assessment
- Personal statement and resume
- Three recommendations
- Transcripts (all collegiate study)
- Music education essay
- Audition (many applied areas also require a prescreening recording)

Complete and up-to-date information about applying to graduate programs can be found here: https://www.esm.rochester.edu/admissions/grad/.

Academics

Advanced Certificates and Requirements

The Department of Music Teaching and Learning does not offer a stand-alone certificate, but offers the Certificate of Advanced Achievement in College and/or Community Music Teaching for current Eastman graduate students enrolled in a degree program. This certificate provides Eastman graduate students in applied music with opportunities to improve their teaching skills. The certificate involves 12 to 14 units of coursework, including MUE 504: Preparing Future Music Faculty; Departmental Pedagogy or Methods, electives, and an internship. More information can be found here: https://www.esm.rochester.edu/certificates/music-teaching/.

Master's Degrees and Requirements

The Master of Arts in Music Education is offered with a Professional Studies track and with a track leading to New York State Initial plus Professional Certification in Music. Master's students seeking New York teaching certification must fulfill prerequisite courses, including conducting, technique classes (for example, clarinet, trumpet, percussion). Core courses for both tracks include courses in measurement and evaluation, research, seminars in history and philosophy of music education, and curriculum; electives in theory, composition or orchestration (determined by placement/advising), and music education; and the MA thesis or field project. In addition, the track leading to New York State initial certification includes a pedagogical core based on an instrument, vocal, or general music emphasis.

The Master of Music in Music Education is offered with the same two tracks as the MA, and includes much of the same core coursework, plus applied lessons (minimum requirement of two semesters). Students present a jury at the end of eights units of applied study.

Summers-only master's study is available for students who have full-time employment as a music teacher, with coursework typically being completed in three summer sessions.

For more complete curriculum information on master's programs in music education, see: https://www.esm.rochester.edu/registrar/policy/07-00/#07.02.05.

Doctoral Degrees and Requirements

The DMA in Music Education is an appropriate degree for a highly accomplished performer who has professional experience as an educator and wishes to expand their understanding of research methods and music pedagogies, while continuing to study their major instrument or voice. The 62-unit degree includes coursework in applied music study (16 to 20 units); 12 units of music education coursework (research and evaluation methods, history and philosophy seminar, and curricular seminar); music history and theory courses; electives; and the DMA dissertation project. Students perform a jury prior to their first doctoral recital. There are two recital requirements, typically one solo recital and one lecture recital. Completion of coursework is followed by the comprehensive examination. For more information on this degree, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.13

The PhD in Music Education is awarded for completion of scholarly research satisfactorily defended in a dissertation. It is assumed that recipients of this degree are not only well-versed in the subject matter of music education but have also demonstrated a breadth of interest and an original outlook that indicate real promise of success in research, as well as mastery of teaching. The 60- to 62-unit degree includes coursework in measurement/evaluation, research, history and philosophy of education, curriculum seminar, two theory courses, two research courses, electives, and the dissertation project. For more complete information on the PhD in music education, see: https://www.esm.rochester.edu/registrar/policy/07-00/#07.03.09.

GRADUATE COURSE TITLES

MTL 402. Measurement and Evaluation
MTL 403. Introduction to Research
MTL 411. Early Childhood Music Education
MTL 412. Elementary General Music Methods
MTL 413. Secondary General Music Methods
MTL 414. Elementary and Middle School Choral Methods
MTL 415. High School Choral Music
MTL 41. Secondary Instrumental Rehearsals: Winds/Percussion
MTL 420. Secondary Instrumental Rehearsals: Strings
MTL 465. Instrumental Techniques Seminar – WBP
MTL 466 Instrumental Techniques Seminar – STR
MTL 471. Teaching Internship
MTL 472. Internship for Certification
MTL 473. Field Project in Music Education
MTL 495. MA Thesis in Music Education
MTL 501. History and Philosophy Seminar
MTL 502. Curriculum Seminar
MTL 503. Collegiate Teaching Internship
MTL 504. Preparing the Future Music Faculty
MTL 505. Seminar in Academic Administration
MTL 506. Internship in Academic Administration
MTL 590. Independent Study
MTL 595. PhD Dissertation Project
MTL 596. DMA Dissertation Project

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Music Leadership

Rachel Roberts
Program Director

Overview

The online Master of Arts in Music Leadership degree is designed for musicians who seek to lead musical arts organizations from on or off the stage. This degree combines engaging online learning, courses from Eastman's performance and scholarly offerings, and hands-on experience through experiential and project-based learning. Drawing from a musical background, graduates are able to step into leading roles in musical arts initiatives of all kinds, connecting with leaders throughout the Eastman community and beyond. The MA in Music Leadership fulfills the New York State Department of Education requirement for K-12 music teachers to advance from an initial certificate to a professional certificate.

Mission Statement and Strategic Goals

The Institute for Music Leadership creates career and leadership development opportunities for musicians on and off the stage. The main goals of the MA in Music Leadership graduate program are to help students develop into successful, creative, and entrepreneurial thinkers and leaders in the music world.

https://iml.esm.rochester.edu/degrees-minors-certificates/ma-in-music-leadership/

Graduate Faculty Information

The MA in Music Leadership is an online degree program. Given the unique nature of this degree, the courses are taught largely by specialists in their respective fields on an adjunct basis (found here under the Institute for Music Leadership tab: https://www.esm.rochester.edu/faculty/).

Rachel Roberts, EdM, *Harvard University*
Associate Professor
Program Director
Primary Appointment(s): Music Leadership

Admissions

Applying to Master's Programs

MA in Music Leadership Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- An 8- to 10-minute video, presenting on a music topic of the candidate's choice

- Three recommendation letters

After review of these materials, candidates interview with the Program Director to assess candidacy.

The MA in Music Leadership can be completed as a full-time student in as little as 14 months, or can be extended part-time for up to five years. The MA can also be part of a combined degree with the University's Simon Business School. Application and acceptance into this program are separate from the MA in Music Leadership.

Academics

Master's Degrees and Requirements

The MA in Music Leadership requires 36 units for completion. For full-time students, this requires six units of required coursework in summer 1, 10 units of required coursework in fall, 12 units of required coursework in spring, and three units of required coursework in summer 2. Additionally, five units of electives complement the required courses; these electives are taken throughout summer 1, fall, and/or spring. The final three credits in summer 2 are a capstone course. After completion of the capstone intensive, each MA in Music Leadership student delivers a final presentation to share their learning, engagement, and takeaways from the degree, and, more specifically, the project work from the capstone.

For more specific requirements, visit this website: https://www.esm.rochester.edu/registrar/forms/audit-sheets-ma/.

GRADUATE COURSE TITLES

ML 410. Music Administration and Governance
ML 411. Economics of Musical Arts Organizations
ML 412. Introduction to Financial Management
ML 413. Law and Music
ML 420. Creative and Innovative Leadership in Musical Enterprises
MTL 421. Leadership Issues in Music
ML 422. Designing Creative Initiatives for Musical Enterprises: Practicum
ML 423. Generating and Screening Entrepreneurial Ideas in Music
ML 431. Marketing for Musical Enterprises
ML 432. Development and Fundraising in Music
ML 480. Internship
ML 485. Mentorship

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Music Theory

Zachary Bernstein
Department Chair

Overview

The Music Theory Department at the Eastman School of Music prepares our graduates to be leaders in music theory pedagogy and research. Equipped with one of the discipline's largest, most diverse, and most distinguished faculties and positioned in an iconic school of music within a leading research university, Eastman's theory department provides a multitude of musical experiences and opportunities for aspiring scholars, teachers, and leaders. We offer a PhD in Music Theory and an MA in Music Theory Pedagogy.

Mission Statement and Strategic Goals

Our graduate students engage in advanced study with a world-class faculty to develop original research and innovative teaching. Both our PhD in Music Theory and our MA in Music Theory Pedagogy programs provide deep training in pedagogy, with extensive pedagogical coursework and workshops and opportunities to teach the full range of undergraduate theory courses. The PhD program further prepares students to become world-class scholars. With a flexible and progressive curriculum, we introduce students to cutting-edge methodologies for the analysis of a wide range of music—Western and non-Western, common-practice and contemporary, classical and vernacular. The breadth of our faculty ensures in-house expertise on a range of music-theoretical topics, from cognition and computational modeling to analysis and aesthetics. Our programs place students at the center of a thriving research community, and a regular roster of distinguished speakers gives students additional first-hand access to cutting-edge scholarship.

https://www.esm.rochester.edu/theory

Graduate Faculty Information

Benjamin Baker, PhD, *University of Rochester*
Assistant Professor of Music Theory
Primary Appointment(s): Music Theory

Zachary Bernstein, PhD, *Graduate Center at the City University of New York*
Associate Professor of Music Theory
Department Chair
Primary Appointment(s): Music Theory

Matthew Brown, PhD, *Cornell University*
Professor of Music Theory
Primary Appointment(s): Music Theory

Jonathan Dunsby, PhD, *University of Leeds, England*
Professor of Music Theory
Primary Appointment(s): Music Theory

Nathan Lam, PhD, *Indiana University, Bloomington*
Assistant Professor of Music Theory
Primary Appointment(s): Music Theory

Sarah Marlowe, PhD, *University of Rochester*
Assistant Professor of Music Theory
Primary Appointment(s): Music Theory

William Marvin, PhD, *University of Rochester*
Associate Professor of Music Theory
Primary Appointment(s): Music Theory

Landon Morrison, PhD, *McGill University*
Assistant Professor of Music Theory
Primary Appointment(s): Music Theory

David Temperley, PhD, *Columbia University*
Professor of Music Theory
Primary Appointment(s): Music Theory

Loretta Terrigno, PhD, *Graduate Center at the City University of New York*
Assistant Professor of Music Theory
Primary Appointment(s): Music Theory

Admissions

Applying to Doctoral Programs

PhD in Music Theory Admission Requirements

- Online application
- Online interview
- Personal statement and resume
- Three recommendations
- Two music research papers, one or both of which are music analysis papers
- Transcripts (all collegiate study)

Applying to Master's Programs

Master of Arts in Pedagogy of Music Theory Admission Requirements

- Online application
- Online interview
- Personal statement and resume
- Three recommendations
- Two research papers, one or both of which are music analysis papers
- Transcripts (all collegiate study)

Applying to Advanced Certificates

Eastman graduate students apply internally for this certificate program, directly to the theory department. Requirements include a transcript, recommendation, and an interview that will cover score analysis, sight singing, error detection and correction, and keyboard skills.

Academics

Advanced Certificates and Requirements

Advanced Certificate in Music Theory Pedagogy offers a course of study for Eastman graduate students pursuing academic careers that combine music performance and music theory teaching. It is open to students enrolled in a graduate degree program at Eastman. The curriculum includes core courses in theory pedagogy and electives chosen from other theory courses, including keyboard skills, counterpoint, and analysis.

Master's Degrees and Requirements

The Master of Arts in Pedagogy of Music Theory is a two-year, 30-unit degree intended for those who wish to focus on a teaching career in music theory. The curriculum includes coursework in theory pedagogy, counterpoint, an apprenticeship in pedagogy, advanced keyboard skills, style composition, analysis courses, elective courses, a teaching recital, and the MA skills exam.

Doctoral Degrees and Requirements

The Doctor of Philosophy in Music Theory is awarded for completion of scholarly research satisfactorily defended in a dissertation. It is assumed that recipients of this degree are not only well-versed in the subject matter of music theory, but have also demonstrated a breadth of interest and original outlook that indicate real promise of success in research, as well as mastery of the teaching of the discipline. Core coursework consists of three required courses (proseminar in theory, pedagogy, and history of theory). Instead of traditional analysis courses, students can choose courses from four areas: common-practice music; 20th- and 21st-century concert music; vernacular music; and non-Western music. Elective courses and the dissertation project complete the 60-credit PhD. More details on achieving candidacy and on the comprehensive and qualifying exams can be found here: https://www.esm.rochester.edu/registrar/policy/07-00/#07.03.11.

GRADUATE COURSE TITLES

TH 421-422. Pedagogy of Music Theory I-II
TH 451. Modal Counterpoint
TH 452. Tonal Counterpoint
TH 471-472. Apprenticeship in Pedagogy I-II
TH 475. Intermediate Keyboard Skills
TH 476. Advanced Keyboard Skills
TH 480. Style Composition
TH 511. Introduction to Theory and Analysis of Tonal Music
TH 513. Introduction to the Theory and Analysis of Twentieth-Century Music
TH 521. Pedagogy of Music Theory
TH 523-524. History of Music Theory I-II
TH 581. Topics in Music Theory
TH 595. PhD Dissertation Project

For a more comprehensive list of requirements, visit: https://www.esm.rochester.edu/registrar/policy/.

Musicology

Michael Anderson
Chair

Overview

The Musicology program at the Eastman School of Music is a leading global hub for musicological research. The graduate program introduces students to a host of musical traditions and critical methodologies that inspire and prepare them to engage in music research or sound studies. The department faculty are leaders in the discipline, and their work encompasses historical and contemporary European musics, musics of the Americas, jazz, and global musics.

Mission Statement and Strategic Goals

The Musicology Department exposes students to a wide range of musical traditions and scholarly approaches that lead them to pursue a field of research study. Creatively designed courses explore the intricacies of musical meaning and aesthetics in diverse historical, cultural, and geographical settings. Offerings reflect a commitment to excellence in research and teaching so that students may discover their discipline through intellectual curiosity. We aim for students to refine musicological and critical thinking skills and to express them in written and oral form, preparing them for careers that are ever-evolving. We also grow students' facility in the art of teaching a humanities-centered approach to the study of music. The department's broad conception of the field of musicology has inclusion and equity at its center.

https://www.esm.rochester.edu/musicology

Graduate Faculty Information

Michael Anderson, PhD, *University of Chicago*
Professor of Musicology
Department Chair
Primary Appointment(s): Musicology

Melina Esse, PhD, *University of California, Berkeley*
Associate Professor of Musicology
Primary Appointment(s): Musicology

Roger Freitas, PhD, *Yale University*
Professor of Musicology
Primary Appointment(s): Musicology

Darren Mueller, PhD, *Duke University*
Assistant Professor of Musicology
Primary Appointment(s): Musicology

Holly Watkins, PhD, *University of California, Berkeley*
Professor of Musicology
Minehan Family Professor
Primary Appointment(s): Musicology

Admissions

Applying to Doctoral Programs

PhD in Musicology Admission Requirements

- Online application
- Online interview
- Personal statement and resume
- Three recommendations
- Two music research papers
- Transcripts (all collegiate study)

Applying to Master's Programs

MA in Musicology Admission Requirements

- Online application
- Online interview
- Personal statement and resume
- Three recommendations
- Two research papers
- Transcripts (all collegiate study)

Applying to Advanced Certificates

Open to Eastman graduate students enrolled in a degree program:

Certificate of Advanced Achievement in Ethnomusicology Admission Requirements

https://www.esm.rochester.edu/certificates/ethnomusicology/

Certificate of Achievement in World Music Admission Requirements

https://www.esm.rochester.edu/certificates/world-music/

Academics

Master's Degrees and Requirements

The Master of Arts in Musicology is a two-year degree awarded en passant after completion of 30 units of coursework, or as a stand-alone degree to master's students not moving on to the PhD, after completion of 34 units. Students must take a minimum of four musicology seminars, Intro to Musicology, Intro to Ethnomusicology, and the MA special project. They also must demonstrate proficiency in a language relevant to their field of specialization.

The Master of Arts in Ethnomusicology carries 35 units, consisting of the above intro courses, ethnomusicology courses, the MA thesis, and electives (one of which must be in theory or another music topic).

Doctoral Degrees and Requirements

The PhD in Musicology is awarded for completion of scholarly research satisfactorily defended in a dissertation. It is assumed that recipients of this degree are not only well-versed in the subject matter of musicology, but have also demonstrated a breadth of interest and original outlook that indicate real promise of

research success, as well as mastery teaching the discipline. A specific program of study is prepared by the student in consultation with the advisor. Core coursework includes the above intro courses, one doctoral-level theory course, directed studies, electives, and the dissertation project.

GRADUATE COURSE TITLES

ETH 480/580. Approaches to Ethnography
ETH 495. MA Thesis in Ethnomusicology
MUY 495. MA Special Project
MUY 501. Introduction to Musicology
MUY 502. Introduction to Ethnomusicology
MUY 591-592. Seminars in Musicology
MUY 593-594. Directed Study I-II
MUY 595. PhD Dissertation Project

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Organ, Sacred Music, and Historical Keyboards

David Higgs
Chair

Overview

Eastman's tradition of organ study builds on a century of remarkable accomplishments. Students are prepared for multifaceted careers as church musicians, teachers, and concert performers through an array of classes and lessons and a wide-ranging weekly colloquium. They also have ample opportunities to practice and perform on a large collection of outstanding instruments.

Mission Statement and Strategic Goals

The Department of Organ, Sacred Music, and Historical Keyboards upholds the highest standards of excellence in the study and performance of the entire arc of the organ repertoire. Renowned faculty members with a broad variety of expertise provide a comprehensive experience for students in all degree programs. Students receive individual attention from all of the department's faculty in a friendly and supportive collegial environment, and have regular access to an unparalleled selection of historic and modern instruments. We prepare students for careers as full-time musicians through instruction in improvisation, sacred music, choral music, continuo, harpsichord, piano, organ repertoire, jazz piano, theatre organ, clavichord, organ building, and more. We are actively engaged with the international profession through sponsorship of student travel abroad as well as participation in international academies, competitions, and conferences. A strong commitment to local community outreach is demonstrated through the presentation of more than 200 local organ concerts each year.

https://www.esm.rochester.edu/organ

Graduate Faculty Information

David Higgs, MM, *Manhattan School of Music*
Professor of Organ
Primary Appointment(s): Organ, Sacred Music, and Historical Keyboards

Nathan Laube, MM, *Staatliche Hochschule fur Musik und Darstellende Kunst*
Associate Professor of Organ
Primary Appointment(s): Organ, Sacred Music, and Historical Keyboards

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement
- A resume or CV
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

Applying to Advanced Certificates

Advanced Certificate in Performance Admission Requirements

- Online application
- A personal statement
- A resume or CV
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

See https://www.esm.rochester.edu/admissions/grad/ for the most up-to-date application/audition and prescreening requirements.

Academics

Advanced Certificates and Requirements

The Advanced Diploma in Performance is a one-year program (which can be extended) that centers around private instruction on the major instrument as well as high-level chamber music and ensemble experiences. In addition, students can enroll in practical elective coursework that will supplement their performance study and better prepare them for a career as a professional musician. For each of the two semesters, the core courses are four units of applied music lessons, one unit of ensembles, a one-unit Diploma Colloquium, and performance project (completed in the second or final semester of study). For the most up-to-date information, see: https://www.esm.rochester.edu/admissions/grad/adp/.

Master's Degrees and Requirements

The Master of Music degree is a two-year program with strong emphasis on applied instrumental or vocal study and performance as well as broad intellectual development. Prerequisites include demonstrated proficiency on the major instrument or voice and an undergraduate degree in music or its equivalent. Core requirements include 16 units of applied instruction, three music history courses, a theory course, ensembles, electives, organ repertory courses, and a degree recital. For the most up-to-date course requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.11.

Doctoral Degrees and Requirements

The Doctor of Musical Arts degree is designed to represent high attainment in the practice of music. Prerequisites include demonstration of high achievement in performance through an audition, and demonstration of writing ability through submission of a scholarly paper and academic credentials, including transcripts of all previous collegiate-level coursework. The coursework for the degree is typically completed over six semesters (three years), followed by the doctoral comprehensive exam. Core coursework generally includes six semesters of lessons, four doctoral seminars, three theory courses, and a minor or electives. In addition, there are two performance recitals and a lecture-recital. The degree culminates in the comprehensive exam: a two-day written exam covering music history and theory, and a final oral exam centered around the student's major instrument and its repertoire, pedagogy, and organology. For the most up-to-date requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.14.

GRADUATE COURSE TITLES

460A. Primary Lessons
430A. Primary Lessons (1/2 time)
OSH 401-404. Sacred Music Skills
OSH 405. Organ Improvisation
OSH 407. Harpsichord Performance and Literature through the 18th Century
OSH 421-424. Organ Repertoire I-IV
OSH 443-444. Keyboard Continuo Realization
OSH 491-492. Organ Department Colloquium

Other coursework for this program is housed in other departments, such as musicology and music history. For a more comprehensive list of requirements, visit: https://www.esm.rochester.edu/registrar/policy/.

Piano Accompanying and Chamber Music

Andrew Harley
Program Director

Overview

The Eastman Piano Accompanying and Chamber Music Program is one of the oldest and most distinguished collaborative piano programs in the nation. The program resides within the Eastman Piano Department, whose faculty consists of international piano competition winners and directors, founders and faculty members of renowned music festivals, and artists who remain active with performances, master classes, festival teaching, and competition adjudication around the world. The accompanying program has five faculty members and offers both the MM and DMA degrees.

Mission Statement and Strategic Goals

The Piano Accompanying and Chamber Music Program is dedicated to the pursuit of artistic, pianistic, and collaborative excellence, offering a uniquely comprehensive training for professional collaborative pianists of the future. In line with the strategic goals of the Eastman Piano Department, the program is committed to the highest standards of artistic education for exceptional pianists from around the world who want to discover their full potential as both musicians and scholars. Our program provides the knowledge and skills to develop musicians who are guided by academic, pianistic, and musical excellence.

https://www.esm.rochester.edu/accompanying

Graduate Faculty Information

Andrew Harley, DMA, *University of California, Los Angeles*
Associate Professor of Collaborative Piano
Program Director
Primary Appointment(s): Piano Accompanying and Chamber Music

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement and resume
- Music research paper
- A prescreening and audition
- Three recommendation letters
- Transcripts (all collegiate study)

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement and resume
- A prescreening and audition
- Three recommendation letters
- Transcripts (all collegiate study)

Academics

Master's Degrees and Requirements

The Master of Music degree in Piano Accompanying and Chamber Music combines intensive and equal study of instrumental and vocal collaborative repertoire, in addition to the study of chamber music, opera, and orchestral keyboard. The degree requirements offer a rigorous academic education emphasizing the study of foreign language, music history, and music theory. Pianists in the program may also pursue specialized study of vocal literature with vocal coaching faculty. Students must complete two degree recitals (instrumental and vocal) and an oral exam.

Doctoral Degrees and Requirements

Like the Master of Music degree, the Doctor of Musical Arts degree in Piano Accompanying and Chamber Music combines intensive and equal study of instrumental and vocal collaborative repertoire, in addition to the study of chamber music, opera, and orchestral keyboard. It emphasizes the study of foreign language, music history, and music theory, and includes a mandatory minor, such as solo piano, music theory, pedagogy, sacred music, and vocal coaching. Pianists in the program may also pursue specialized study of vocal literature with vocal coaching faculty. Four degree recitals are required (instrumental, vocal, a third accompanying recital, and a lecture recital). Students also must complete the DMA written and oral exam.

GRADUATE COURSE TITLES

ACM 460A. Primary Accompanying
ACM 430A. Primary Accompanying (1/2 time)
ACY 405. Opera Coaching
ACY 415. English Lyric Diction
ACY 416. French Lyric Diction
ACY 417. German Lyric Diction
ACY 418. Italian Lyric Diction

For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Piano

Alan Chow
Chair

Overview

The education of pianists at the Eastman School of Music emphasizes the development of a large performance repertory along with the pianistic skills that will prepare students as solo artists and collaborative musicians. In addition to traditional works from the 18th, 19th, and 20th centuries, pianists are encouraged to explore early keyboard music, contemporary, and experimental literature. Frequent performance opportunities in a variety of venues include concerto performances, solo recitals, chamber recitals, master classes, and studio classes. Our faculty are international piano competition winners and directors, and founders and faculty members of renowned music festivals who stay active with performances, master class festival teaching, and competition adjudication around the world. For more information, please explore our program webpage.

Mission Statement and Strategic Goals

The piano department at the Eastman School of Music is committed to the highest standards of artistic education for accomplished pianists from around the world, helping them to discover their full potential as musicians and scholars. Our mission is to provide the knowledge and skills to help our students find their place in the music world, become musicians who are guided by the highest ideals of excellence, and be the most effective advocates for the importance of music in our evolving society. Through focused attention to the individual needs of each student, we will help them prepare for success in academia and performance.

https://www.esm.rochester.edu/piano

Graduate Faculty Information

Tony Caramia, MM, *SUNY Fredonia*
Professor
Primary Appointment(s): Piano

Alan Chow, MM, *Juilliard School of Music*
Professor
Department Chair
Primary Appointment(s): Piano

Ran Dank, DMA, *Graduate Center at the City University of New York*
Associate Professor
Primary Appointment(s): Piano

Douglas Humpherys , DMA, *University of Rochester*
Professor
Primary Appointment(s): Piano

Alexander Kobrin, DMA equiv., *Moscow Conservatory*
Associate Professor
Primary Appointment(s): Piano

Marina Lomazov, DMA, *University of Rochester*
Professor
Primary Appointment(s): Piano

Joseph Rackers, DMA, *University of Rochester*
Professor
Primary Appointment(s): Piano

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- A prescreening and audition
- Three recommendation letters

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A prescreening and audition
- Three recommendation letters

Applying to Advanced Certificates

Advanced Certificate in Performance Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A prescreening and audition
- Three recommendation letters

See https://www.esm.rochester.edu/admissions/grad/ for the most up-to-date application/audition and prescreening requirements.

Academics

Advanced Certificates and Requirements

The Advanced Diploma in Performance is a one-year program (which can be extended) that centers around private instruction on the major instrument as well as high-level chamber music and ensemble experiences. In addition, students can enroll in practical elective coursework that will supplement their performance study and better prepare them for a career as a professional musician. For each of the two semesters, the core courses are four units of applied music lessons, one unit of ensembles, a one-unit Diploma Colloquium, and Performance Project (completed in the second or final semester of study). For the most up-to-date information, see: https://www.esm.rochester.edu/admissions/grad/adp/.

Master's Degrees and Requirements

The Master of Music degree is a two-year program with strong emphasis on applied instrumental or vocal study and performance as well as broad intellectual development. Prerequisites include demonstrated proficiency on the major instrument or voice and an undergraduate degree in music or its equivalent. Core requirements include 16 units of applied instruction, three music history courses, a theory course, ensembles, electives, and a degree recital. For the most up-to-date course requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.11.

Doctoral Degrees and Requirements

The Doctor of Musical Arts degree is designed to represent high attainment in the practice of music. Prerequisites include demonstration of high achievement in performance through an audition and demonstration of writing ability through submission of a scholarly paper and academic credentials, including transcripts of all previous collegiate-level coursework. The coursework for the degree is typically completed over six semesters (three years), followed by the doctoral comprehensive exam. Core coursework generally includes six semesters of lessons, four doctoral seminars, three theory courses, and a minor or electives. In addition, there are three performance recitals (two solo, one collaborative) and a lecture-recital. The degree culminates in the comprehensive exam: a two-day written exam covering music history and theory, and a final oral exam centered around the student's major instrument and its repertoire, pedagogy, and organology. For the most up-to-date requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.14.

GRADUATE COURSE TITLES

PA 460A. Primary Piano
PA 430A. Primary Piano (1/2 time)

Most courses for this program are housed outside of the piano department (musicology, theory, etc.). For a more comprehensive list of requirements, visit: https://www.esm.rochester.edu/registrar/policy/.

Strings, Harp, and Guitar

David Ying
Chair

Overview

Eastman's Strings, Harp, and Guitar Department develops and prepares young artists for multifaceted professional performing and teaching careers at the highest level. We do so in a dynamic, supportive, and collegial environment that promotes creative growth and endless possibilities. At Eastman, you will find a multitude of opportunities to hone your skills as a performer, including orchestral ensembles, recitals, chamber music, studio classes, master classes, and competitions. We provide our students with a host of diverse experiences to perform and develop themselves as complete musicians. Eastman's historic building offers three outstanding performance halls, which are open to student performances throughout the year. Our passion for teaching and our expertise in pedagogy also inspire students to become accomplished teachers. Graduates of our program perform in many of the world's renowned chamber ensembles, orchestras, and new and early music ensembles. Our alumni pursue groundbreaking and imaginative musical paths, and many of the world's leading music schools also boast Eastman graduates as members of their string faculty.

Mission Statement and Strategic Goals

The Strings, Harp, and Guitar Department of the Eastman School of Music is firmly committed to providing our students with the highest standard of a complete artistic education, enabling each of our SHG students to realize their fullest potential in the profession. With a distinct emphasis on the individual needs of each student, our SHG faculty provide our students with an exemplary artistic standard, critical knowledge, musical curiosity, and professional and scholarly expertise. This helps to ensure our students' professional success, so they can develop their own significant musical contributions to our evolving profession.

https://www.esm.rochester.edu/strings

Graduate Faculty Information

David Bowlin, DMA, *SUNY at Stony Brook*
Professor of Violin
Primary Appointment(s): Strings, Harp, and Guitar

Steven Doane, MM, *SUNY Stony Brook*
Professor of Violoncello
Primary Appointment(s): Strings, Harp, and Guitar

Nicholas Goluses, DMA, *Manhattan School of Music*
Professor of Guitar
Primary Appointment(s): Strings, Harp, and Guitar

YooJin Jang, DMA, *New England Conservatory*
Assistant Professor of Violin
Primary Appointment(s): Strings, Harp, and Guitar

Joseph Johnson, MM, *Northwestern University*
Associate Professor of Violoncello
Primary Appointment(s): Strings, Harp, and Guitar

Renée Jolles, MM, *Juilliard School of Music*
Professor of Violin
Wegman Family Professor of Violin
Primary Appointment(s): Strings, Harp, and Guitar

Mikhail Kopelman, DMA equiv., *Moscow Conservatory*
Professor of Violin
Primary Appointment(s): Strings, Harp, and Guitar

Paul O'Dette
Professor of Lute
Primary Appointment(s): Strings, Harp, and Guitar
Joint Appointment(s): Conducting and Ensembles

Masumi Rostad, MM, *Juilliard School of Music*
Associate Professor of Viola
Primary Appointment(s): Strings, Harp, and Guitar

Robin Scott, BM, *New England Conservatory*
Associate Professor of String Chamber Music and Violin
Primary Appointment(s): Strings, Harp, and Guitar

George Taylor
Professor of Viola
Primary Appointment(s): Strings, Harp, and Guitar

James Van Demark, BFA, *SUNY Buffalo*
Professor of Double Bass
Primary Appointment(s): Strings, Harp, and Guitar

David Ying, DMA, *University of Rochester*
Associate Professor of String Chamber Music and Violoncello
Department Chair
Primary Appointment(s): Strings, Harp, and Guitar

Janet Ying, BM, *University of Rochester*
Associate Professor of String Chamber Music
Primary Appointment(s): Strings, Harp, and Guitar

Phillip Ying, MM, *University of Rochester*
Associate Professor of String Chamber Music and Viola
Primary Appointment(s): Strings, Harp, and Guitar

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement
- A resume or CV
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

Applying to Advanced Certificate Programs

Advanced Certificate in Performance Admission Requirements

- Online application
- A personal statement
- A resume or CV
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

See https://www.esm.rochester.edu/admissions/grad/ for the most up-to-date application/audition and prescreening requirements.

Academics

Advanced Certificates and Requirements

The Advanced Diploma in Performance is a one-year program (which can be extended) that centers around private instruction on the major instrument as well as high-level chamber music and ensemble experiences. In addition, students will have the ability to enroll in practical elective coursework that will supplement their performance study and better prepare them for a career as a professional musician. For each of the two semesters, the core courses are four units of applied music lessons, one unit of ensembles, a one-unit Diploma Colloquium, and a Performance Project (completed in the second or final semester of study). For the most up-to-date information, see: https://www.esm.rochester.edu/admissions/grad/adp/.

Master's Degrees and Requirements

The Master of Music degree is a two-year program with strong emphasis on applied instrumental or vocal study and performance, as well as broad intellectual development. Prerequisites include demonstrated proficiency on the major instrument or voice and an undergraduate degree in music or its equivalent. Core requirements include 16 units of applied instruction, three music history courses, a theory course, ensembles, electives, and a degree recital. For the most up-to-date course requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.11 .

Doctoral Degrees and Requirements

The Doctor of Musical Arts degree is designed to represent high attainment in the practice of music. Prerequisites include demonstration of high achievement in performance through an audition, and demonstration of writing ability through submission of a scholarly paper and academic credentials, including transcripts of all previous collegiate-level coursework. The coursework for the degree is typically completed over six semesters (three years), followed by the doctoral comprehensive exam. Core coursework generally includes six semesters of lessons, four doctoral seminars, three theory courses, and a minor or electives. In addition, there are two performance recitals and a lecture-recital. The degree culminates in the comprehensive exam: a two-day written exam covering music history and theory, and a final oral exam centered around the student's major instrument and its repertoire, pedagogy, and organology. For the most up-to-date requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.14 .

GRADUATE COURSE TITLES

460A. Primary Lessons
430A. Primary Lessons (1/2 time)
GTC 401-402. Seminar in Guitar Studies

Most courses for this program are housed in other departments, such as musicology and music theory. For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

Voice, Opera, and Vocal Coaching

Robert Swensen
Chair

Overview

We are a team of highly accomplished professionals in many areas of voice teaching, vocal coaching and repertoire, language acquisition, acting training, and opera production. Our work gives us immense joy because it is focused solely on the growth and success of our students. We feel that all the work needed to bring a concert, a recital, or a production to a standard of excellence is rewarded in the beauty and compelling communication of our students in various vocal art forms. As a community of artist-educators, we celebrate each other's students in their artistic achievements. We respect the many types of expertise the faculty and staff bring to each project and the many levels of students we serve. Our department strives to become ever more aware of the impact of structural racial injustice, and we continually revise our policies and procedures to provide an inclusive, safe, and equitable environment for all our students.

Mission Statement and Strategic Goals

The Voice, Opera, and Vocal Coaching program offers an environment of excellence in which the healthiest comprehensive development of the vocal artist can be achieved. The strategic goals of healthy vocal technique, age-appropriate repertoire, and an understanding of musical style underlie the growth of expressive, communicative singers. While an operatic career may be the primary focus of many students pursuing majors in vocal performance at Eastman, our curriculum supports singers to become versatile, artistically creative, and technically secure to compete successfully in today's marketplace.

Eastman Opera Theatre offers a comprehensive program of training and performance opportunities for the modern singer-actor. Performance techniques courses offer concentrated study in body self-awareness and movement, acting, text analysis, role study, stage combat, audition techniques, and stage directing. Each year, productions feature a wide range of musical styles, unusual lyric forms, and both traditional and contemporary repertoire that prepare the motivated student for the professional lyric theater world of tomorrow.

The coaches at Eastman strive to assist the voice teachers in preparing our students for both current performance needs and a lifetime of thoughtful and disciplined musical and linguistic preparation. There is no extra fee for coaching at Eastman. Our coaching team includes one part-time and two full-time faculty members, and several affiliate faculty from other Eastman departments. Our coaches do not address any technical matters of voice production but rather focus on repertoire, diction, rhythm, interpretation and style. The singers' own pianists are welcome and encouraged to come to their coaching sessions whenever possible, but this is not required.

Every full-time voice major currently studying with an Eastman faculty member is entitled to regular coaching sessions in conjunction with their lessons. All coaching is registered and graded like any other course. Repertoire is selected and prioritized in collaboration with the student's major teacher. Vocal chamber repertoire and oratorio are welcome in addition to songs and opera arias.

https://www.esm.rochester.edu/voice

Graduate Faculty Information

Nicole Cabell, BM, *University of Rochester*
Assistant Professor of Voice
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Katherine Ciesinski, MM, *Temple University*
Professor of Voice
Martin E. and Corazon D. Sanders Professor of Voice,
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Joshua Conyers, MM, *Indiana University, Bloomington*
Assistant Professor of Voice
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Kathryn Cowdrick, MS, *Columbia University*
Professor of Voice
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Alison d'Amato, DMA, *New England Conservatory*
Associate Professor of Vocal Coaching
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Pat Diamond, MFA, *Yale University*
Associate Professor of Opera
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Kiera Duffy, MM, *Westminster Choir College*
Associate Professor of Voice
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Anthony Dean Griffey, MM, *University of Rochester*
Professor of Voice
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Timothy Long, MM, *University of Rochester*
Professor of Opera
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Robert Swensen, MM, *University of Southern California*
Professor of Voice
Department Chair
Primary Appointment(s): Voice, Opera, and Vocal Coaching

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- A prescreening and audition
- Three recommendation letters

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A prescreening and audition
- Three recommendation letters

See https://www.esm.rochester.edu/admissions/grad/ for the most up-to-date application/audition and prescreening requirements.

Academics

Master's Degrees and Requirements

The Master of Music degree is a two-year program with strong emphasis on applied instrumental or vocal study and performance as well as broad intellectual development. Prerequisites include demonstrated proficiency on the major instrument or voice and an undergraduate degree in music or its equivalent. Core requirements include 16 units of applied instruction, three music history courses, a theory course, ensembles, and electives, and a degree recital. Voice majors must also demonstrate foreign language proficiency and take courses in voice repertoire. In addition, the department puts up at least three mainstage productions each year. For the most up-to-date course requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.11.

Doctoral Degrees and Requirements

The Doctor of Musical Arts degree is designed to represent high attainment in the practice of music. Prerequisites include demonstration of high achievement in performance through an audition, and demonstration of writing ability through submission of a scholarly paper and academic credentials, including transcripts of all previous collegiate-level coursework. The coursework for the degree is typically completed over six semesters (three years), followed by the doctoral comprehensive exam. Core coursework generally includes six semesters of lessons, four doctoral seminars, three theory courses, and a minor or electives. In addition, there are two performance recitals and a lecture-recital. Voice majors must also enroll in a choral ensemble for one semester,

perform a jury, and demonstrate language proficiency. The degree culminates in the comprehensive exam: a two-day written exam covering music history and theory, and a final oral exam centered around the student's major instrument and its repertoire, pedagogy, and organology. For the most up-to-date requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.14.

GRADUATE COURSE TITLES

OP 401-402. Seminar in Opera Stage Directing
OP 410. Opera Production: Stage Management
OP 416. Advanced Opera Seminar
OP 430. Opera Theatre Practicum
OP 432. Opera Theatre Scenes Practicum
OP 490. Opera Director Project – Independent Study
VCE 460A. Primary Voice
VCE 430A. Primary Voice (1/2 time)
VCC 400. Vocal Coaching
VCC 402. Voice Repertoire for the Pianist
VCC 431-432. Voice Repertoire (Master's)
OP 430. Opera Theatre Practicum
OP 432. Opera Theatre Scenes Practicum

Many courses for this program are housed in other departments, such as musicology and music theory. For a more comprehensive list of requirements, visit: https://www.esm.rochester.edu/registrar/policy/.

Woodwind, Brass, and Percussion

Mark Kellogg
Chair

Overview

The primary goal of the Woodwind, Brass, and Percussion Department is to instill the highest possible level of musicianship in each student. This is accomplished in our teaching studios by embracing the fundamentals of posture, breathing, characteristic tone production, intonational acuity, solidity of rhythm, beauty of phrasing, sight reading, and good ensemble skills. Participation in studio classes, solo recitals, chamber music groups, and our school's wind ensembles, orchestras, film music ensembles, new music groups, and jazz ensembles all help to prepare our students for their futures as professional performers and teachers.

Mission Statement and Strategic Goals

The mission of the WBP Department at the Eastman School of Music is to provide our students with the foundation necessary to hold positions in symphony orchestras, classrooms, premier military bands, opera or Broadway pits, and teaching studios. We also realize that our students will be faced with career opportunities and challenges in the coming years that we cannot even imagine. By fostering a sense of curiosity, high artistic standards, and a willingness to be open to this ever-changing musical landscape, we ensure their ability to make substantive contributions to the profession.

https://www.esm.rochester.edu/wbp

Graduate Faculty Information

Justin Benavidez, DMA, *University of Michigan*
Associate Professor of Tuba and Euphonium
Primary Appointment(s): Woodwind, Brass, and Percussion

Bonita Boyd, BM, *University of Rochester*
Professor of Flute
Primary Appointment(s): Woodwind, Brass, and Percussion

Michael Burritt, MM, *University of Rochester*
Professor of Percussion
Paul J. Burgett Distinguished Professor
Primary Appointment(s): Woodwind, Brass, and Percussion

Mark Kellogg, BM, *University of Rochester*
Professor of Trombone
Department Chair
Primary Appointment(s): Woodwind, Brass, and Percussion
Joint Appointment(s): Jazz Studies and Contemporary Media

Richard Killmer, DMA, *Yale University*
Professor of Oboe
Primary Appointment(s): Woodwind, Brass, and Percussion

W. Peter Kurau, MA, *University of Connecticut*
Professor of Horn
Primary Appointment(s): Woodwind, Brass, Percussion

Chien-Kwan Lin, DMA, *University of Rochester*
Professor of Saxophone
Primary Appointment(s): Woodwind, Brass, and Percussion

Andrew McCandless
Associate Professor of Trumpet
Primary Appointment(s): Woodwind, Brass, and Percussion

George Sakakeeny, BM, *University of Rochester*
Professor of Bassoon
Primary Appointment(s): Woodwind, Brass, and Percussion

Michael Wayne, BM, *University of Michigan*
Associate Professor of Clarinet
Primary Appointment(s): Woodwind, Brass, and Percussion

Larry Zalkind, MM, *University of Southern California*
Professor of Trombone
Primary Appointment(s): Woodwind, Brass, and Percussion

Admissions

Applying to Doctoral Programs

Doctor of Musical Arts Admission Requirements

- Online application
- A personal statement
- A resume or CV
- A sample writing of a past research paper and/or previously published article or submission
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

Applying to Master's Programs

Master of Music Admission Requirements

- Online application
- A personal statement
- A resume or CV
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

Applying to Advanced Certificates

Advanced Certificate in Performance Admission Requirements

- Online application
- A personal statement
- A resume or CV
- An audition on the major instrument (and prescreening recordings in most cases)
- Three recommendation letters

See https://www.esm.rochester.edu/admissions/grad/ for the most up-to-date application/audition and pre-screening requirements.

Academics

Advanced Certificates and Requirements

The Advanced Diploma in Performance is a one-year program (which can be extended) that centers around private instruction on the major instrument as well as high-level chamber music and ensemble experiences. In addition, students will have the ability to enroll in practical elective coursework that will supplement their performance study and better prepare them for a career as a professional musician. For each of the two semesters, the core courses are four units of applied music lessons, one unit of ensembles, a one-unit Diploma Colloquium, and Performance Project (completed in the second or final semester of study). For the most up-to-date information, see: https://www.esm.rochester.edu/admissions/grad/adp/.

Master's Degrees and Requirements

The Master of Music degree is a two-year program with strong emphasis on applied instrumental or vocal study and performance as well as broad intellectual development. Prerequisites include demonstrated proficiency on the major instrument or voice and an undergraduate degree in music or its equivalent. Core requirements include 16 units of applied instruction, three music history courses, a theory course, ensembles, electives, and a degree recital. For the most up-to-date course requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.02.11.

Doctoral Degrees and Requirements

The Doctor of Musical Arts degree is designed to represent high attainment in the practice of music. Prerequisites include demonstration of high achievement in performance through an audition, and demonstration of writing ability through submission of a scholarly paper and academic credentials, including transcripts of all previous collegiate-level coursework. The coursework for the degree is typically completed over six semesters (three years), followed by the doctoral comprehensive exam. Core coursework generally includes six semesters of lessons, four doctoral seminars, three theory courses, and a minor or electives. In addition, there are two performance recitals and a lecture-recital. The degree culminates in the comprehensive exam: a two-day written exam covering music history and theory, and a final oral

exam centered around the student's major instrument and its repertoire, pedagogy, and organology. For the most up-to-date requirements, see: https://www.esm.rochester.edu/registrar/policy/06-00/#06.03.14.

GRADUATE COURSE TITLES

430A. Primary Lessons (half-time)
460A. Primary Lessons

Most courses for this program are housed in other departments, such as musicology and music theory. For a more comprehensive list of requirements, visit https://www.esm.rochester.edu/registrar/policy/.

School of Medicine and Dentistry

Administrative Officers

David C. Linehan, MD
Dean

Judith Baumhauer, MD
Senior Associate Dean for Academic Affairs Medical School Education

Stephen Dewhurst, PhD
Vice President for Research (UR) and Vice Dean for Research (SMD)

Sarah Peyre, EdD
Chief Operating Officer and Vice Dean for Education (SMD)

Eli Eliav, DMD, PhD
Director for Eastman Institute for Oral Health and Vice Dean for Oral Health (SMD)

David R. Lambert, MD
Senior Associate Dean for Medical School Education

Richard T. Libby, PhD
Senior Associate Dean for Graduate Education and Postdoctoral Affairs

Brett Robbins, MD
Senior Associate Dean for Graduate Medical Education

Paula M. Vertino, PhD
Senior Associate Dean for Basic Research

Martin S. Zand, MD, PhD
Senior Associate Dean for Clinical Research

Nathan A. Smith, PhD
Associate Dean for Equity and Inclusion for Research and Research Education

Committee on Graduate Studies (Graduate Education)

The voting members of the Committee on Graduate Studies consists of graduate program directors of PhD, master's, and certificate programs; the senior associate dean for graduate education, who is chair; the director of the Office for Graduate Education and Postdoctoral Affairs; and the registrar for graduate programs.

- Richard Libby, PhD, Chair
- Lauren DeCaporale-Ryan, PhD
- Michelle Dziejman, PhD
- Alison Elder, PhD
- Benjamin Frisch, PhD
- Angela Glading, PhD
- J. Christopher Holt, PhD
- Paul Kammermeier, PhD
- Yue Li, PhD
- Marie-Patricia Luck, MBChB
- John D. Lueck, PhD
- David Mathews, MD, PhD
- David M. MacLean, PhD
- Matthew McCall, PhD
- Sharon McCullough, MBA
- Helene McMurray, PhD
- Josh Munger, PhD
- Douglas Portman, PhD
- Matthew Rand, PhD
- David Rich, ScD
- Jacques Robert, PhD
- Vicki Roberts, MS
- Audrey Schroeder, MS
- Christopher Seplaki, PhD
- Ruth Serra-Moreno, PhD
- Jenny Speice, PhD
- Sean Tanny, PhD
- Juilee Thakar, PhD
- Madalina Tivarus, PhD
- Edwin van Wijngaarden, PhD
- Tongtong Wu, PhD

Responsibilities include

- To advise the senior associate dean for graduate education on the general conduct and administration of graduate work in the school
- To determine policies concerning administration of graduate programs
- To oversee the conduct and performance of graduate students in the School of Medicine and Dentistry
- To serve on the SMD Standing Conduct Panel as needed
- To review and vote on proposals for new course work in the school

- To submit to the University Council on Graduate Studies, for its approval, proposals affecting the general policies of graduate work, authorization of new degree and certificate programs, and changes in general requirements for graduate degree and certificate programs
- To make reports to the program faculty on matters that it is studying and on which it has taken action
- To nominate students for graduate awards.

Committee on Graduate Studies (Medical Education)

The Curriculum Steering Committee (CSC) is the decision-making body charged with oversight of the MD curriculum. The CSC is empowered by the dean and the Medical School Advisory Council (MedSAC) to oversee the MD curriculum. The CSC communicates information about the MD program to the faculty of the School of Medicine and Dentistry. The CSC also advises the senior associate dean for medical student education, who is charged by and reports to the dean of the School of Medicine and Dentistry.

Name	*Role*	*Voting Status*
Permanent		
David R. Lambert, MD	Senior Associate Dean for Medical Student Education, Chair	Ex-Officio
Christopher Mooney, PhD, MPH	Director, Assessment	Ex-Officio
Christine Hay, MD	Associate Dean for Admissions	Ex-Officio
Permanent Rotating		
Nancy Clark, MD	Chair, First and Second Year Instruction Committee	Ex-Officio
Christopher Tarolli, MD	Vice Chair, First and Second Year Instruction Committee	Ex-Officio
Jennifer Readlynn, MD	Chair, Third and Fourth Year Instruction Committee	Ex-Officio
Laura Cardella, MD	Vice Chair, Third and Fourth Year Instruction Committee	Ex-Officio
Adam Simning, MD	Chair, Medical Faculty Group	Voting
Naveen Mysore, MD	Vice Chair, Medical Faculty Group	Voting
Rotating Faculty-at-Large		
Daniela DiMarco, MD, MPH	Department of Medicine, Infectious Disease	Voting
John Frelinger, PhD	Department of Microbiology and Immunology	Voting
Ticha Munda, MD, MRes	Department of Anesthesiology & Perioperative Medicine, OBGYN	Voting
Keith Nehrke, PhD	Department of Medicine, Nephrology	Voting
Jenny Yen-Jen Shen, MD	Department of Medicine, Hospital Medicine	Voting

School Mission Statement

We improve the well-being of patients and communities by delivering innovative, compassionate, patient- and family-centered health care, enriched by education, science, and technology.

School-Level Graduate Awards (Graduate Education)

- Wallace O. Fenn Award
- Vincent du Vigneaud Award
- Leadership Award for Excellence in Equity and Inclusion
- Dissertation Award for Excellence in Equity and Inclusion
- Graduate Alumni Fellowship
- Merritt and Marjorie Cleveland Fellowship
- Marvel Nutting Dare Award
- Irving L. Spar Fellowship
- J. Newell Stannard Student Scholarship
- Outstanding Student Mentor Award
- myHub Grad Student Travel Award
- Graduate Student Award for Excellence in Equity and Inclusion
- Master's Award for Excellence in Scholarship
- Master's Award for Outstanding Service
- Advanced Certificate Award for Practical Excellence

School-Level Graduate Awards and Fellowships (Medical Education)

- The American Academy of Neurology Medical Student Prize for Excellence in Neurology
- The American College of Emergency Physicians Award
- The Rudolph Angell Award
- The Robert L. Caldwell Prize in Surgery
- The Class of 1976 Prize
- The Jules Cohen Award for Advancing Medical Education
- The Bryce Collier Prize
- Costanza Community Impact Award
- Creative Initiative in Community Health Award
- The Dean's Award
- Fiscella Excellence in Community Health Award
- The Department of Family Medicine Commencement Award

- The Glasgow-Rubin Achievement Award
- The Glasgow-Rubin Achievement Citations
- The Robert J. Haggerty Prize in Pediatrics
- The Robert J. Joynt, MD, PhD Prize for Excellence in Clinical Neurology
- The Robert E. Kates Award
- R. Knight Steel Award for Excellence in Geriatric Medicine
- The Charles D. Kochakian Award in Endocrinology and Nutrition
- The Dean Brenda D. Lee Award
- The Department of Obstetrics and Gynecology Commencement Award
- Department of Psychiatry Commencement Award
- The Society of Academic Emergency Medicine Prize
- The Jack I. Stein Memorial Prize
- The Doran J. Stephens Prize
- The Medical Society of the State of New York Community Service Award
- The United States Excellence in Public Health Award
- USPHS Military Student Award
- The William B. Hawkins Award
- The Kenneth Woodward Memorial Award
- The Gold Humanism Honor Society
- The Leonard Tow Humanism in Medicine Award
- The Edward F. Adolph Medal in Physiology
- The Victor Meyer Emmel Prize in Histology
- The Hrolfe and Dorothy Ziegler Prize in Anatomy
- The Walle J.H. Nauta Award for Excellence in Neurosciences
- The Gilbert B. Forbes Prize in Pediatrics
- The Adenia Andrews Community Service Award
- The Marvin J. Hoffman Awards
- Community Outreach Award
- International Medicine Award
- Excellus Blue Cross/Blue Shield of Greater Rochester Geriatric Research Award
- Basic Science/Clinical/Translational Research Award
- Levitan Fellowship
- The David Hamilton Smith Year-Out Fellowship
- Hawkins Fellowship

Medical Education

David R. Lambert
Senior Associate Dean for Medical Student Education

Overview

The University of Rochester School of Medicine and Dentistry is dedicated to training future humanistic physicians who are leaders in clinical medicine, research, and administration. The Double Helix Curriculum–Translations and Transitions integrates clinical and basic science throughout four years, emphasizing the biopsychosocial model.

Our curriculum includes instruction in the pillars of collaborative care, technology in medicine, and professional identity formation. Our instruction utilizes a variety of modalities, including problem-based learning, small-group experiences, simulations, and team-based learning. Medical humanities transcend our curriculum to facilitate education in innovative and creative ways. Outcomes assessments guide students in achieving excellence.

Numerous research opportunities, community service, elective pathways, and international opportunities help students achieve their long-term educational and career goals. The school is committed to setting the highest standards in medical education and serving as a national model for innovation and continuous improvement in medical student education. We welcome you to explore our website and appreciate the Rochester difference.

https://www.urmc.rochester.edu/education/md.aspx

School Mission Statement

We improve the health of individuals and populations through an innovative medical education program that emphasizes inclusion, humility, and personal growth.

Graduate Faculty Information

Sarah Betstadt, MD, MPH
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology

Adam Bracken, MD
Assistant Professor
Primary Appointment(s): Medicine and Pediatrics

Elizabeth Brown, MD, MPH
Associate Professor
Primary Appointment(s): Family Medicine

Laura Cardell, MD
Associate Professor
Primary Appointment(s): Psychiatry and Pediatrics

Nancy Clark, MD
Professor of Clinical Medicine
Primary Appointment(s): Medicine

Margarita Corredor, MD
Assistant Professor
Primary Appointment(s): Pediatrics

Amit Dhamoon, MD, PhD
Rank: Professor of Clinical Medicine
Primary Appointment(s): Medicine

Chin-To Fong, MD
Professor
Primary Appointment(s): Pediatrics

Martha Gdowski, PhD
Associate Professor
Primary Appointment(s): Neuroscience

Inna Hughes, MD
Professor
Primary Appointment(s): Neurology and Pediatrics

Suzanne Karan, MD
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine

David Kaufman, MD
Professor
Primary Appointment(s): Surgery

Stella King-Turner, , MD, MHA
Associate Professor of Clinical Family Medicine
Primary Appointment(s): Emergency Medicine

Patricia Luck, MBChB
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics

Katlyn McBride, MD
Assistant Professor
Primary Appointment(s): Medicine

Christopher Mooney, PhD, MPH
Associate Professor
Primary Appointment(s): Medicine

Catherine Moore, MD
Associate Professor
Primary Appointment(s): Medicine

Sergiy Nadtochiy, PhD
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine; Neuroscience; Pharmacology and Physiology

Jennifer Pascoe, MD
Associate Professor
Primary Appointment(s): Medicine

Julie Pasternack, MD
Assistant Professor
Primary Appointment(s): Emergency Medicine

Grayson Pitcher, MD
Assistant Professor
Primary Appointment(s): Surgery

Jennifer Readlynn, MD
Associate Professor
Primary Appointment(s): Medicine

Robert Stone, MD
Associate Professor
Primary Appointment(s): Neurology and Pediatrics

Christopher Tarolli, MD
Associate Professor
Primary Appointment(s): Neurology

Brian Ward, PhD
Professor
Primary Appointment(s): Microbiology and Immunology

Natalie Whaley, MD, MPH
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology

Andrew P. Wojitovich, PhD
Professor
Primary Appointment(s): Anesthesia and Perioperative Medicine; Pharmacology and Physiology

Admissions

Students admitted to the MD program have a strong foundation in science, evidence of curiosity through research/innovation, and demonstration of human connection through clinical experiences, community engagement, and advocacy.

Admissions Requirements

Personal characteristics
Evidence of altruism, an accepting attitude, curiosity, empathy, maturity, professionalism, mindfulness, and resilience

MCAT
With the exception of applicants in our Rochester Early Medical Scholars Program, Early Assurance Program, and Postbac Linkage Program, all applicants are required to take the Medical College Admission Test (MCAT). Applicants may submit an AMCAS application.

Science Coursework

- One year of biology with laboratory. Biochemistry or botany will not satisfy this requirement. AP credit cannot be used to satisfy this requirement.
- One year of physics with laboratory. AP credit can be used to meet one semester of the physics requirement.
- One year of chemistry with laboratory, which must include either one year of organic chemistry or one semester of organic and one semester of biochemistry. AP credit cannot be used to satisfy this requirement.
- One semester of either calculus or statistics. AP credit can be used to meet this requirement.

All above science coursework is required and must be taken in-person, if available.

We recommend courses in general chemistry, statistics, genetics, physiology, and biochemistry.

Non-Science Coursework

- 12 credit hours in the humanities and/or the social or behavioral sciences
- One year of expository writing. This may be met with English or non-science courses that involve expository writing.

AP credit will not satisfy non-science requirements.

MD program applicants are selected for an interview based on a holistic admissions process, which weighs a number of different factors including MCAT, GPA, activities and experiences, letters of recommendation, personal statements, background, undergraduate institution, and mission alignment.

Decisions on admission are made by the Admissions Committee, which includes faculty from clinical and basic science departments and currently enrolled medical students.

Academics

GRADUATE COURSE TITLES

Phase I
HSF 101. Human Structure and Function
ICM 115. Introduction to Clinical Medicine
MEI 100. Medical Evidence and Inquiry
MTC 120. Molecules to Cells
FBP 100. Foundations of Biopsychosocial Practice
PHP 100. Pharmacology
HDC 125. Host Defense
FYC 102. Phase 1 Assessment
MIM 100. Meliora in Medicine
HMU 100. Health Humanities Selectives

Phase II
MBB 205. Mind/Brain/Behavior
PCC 230. Primary Care Clerkship
DPT 201. Disease Processes and Therapeutics Cardiopulmonary Renal
DPT 202. Disease Processes and Therapeutics
OBG 205. Women's Health Course
PED 205. Disorders of Childhood
SYC 200. Phase 2 Assessment
TTL 200. Transitions to Licensure

Phase III
MED 300. Clerkship: Adult Inpatient Medicine – Medicine
SUR 300. Clerkship: Adult Inpatient Medicine – Surgery
PSY 300. Clerkship: Mind Brain Behavior – Psychiatry
NEU 300. Clerkship: Mind Brain Behavior – Neurology
OBG 300. Clerkship: Women and Children's Health – Obstetrics and Gynecology
PED 300. Clerkship: Women and Children's Health – Pediatrics
SSF 301. Scientific and Social Foundations of Medicine: Principles of ICU Science and Ethics
SSF 302. Scientific and Social Foundations of Medicine: Genes, Ecology, and Culture
SSF 303. Scientific and Social Foundations of Medicine: Mind, Brain, and Behavior II
TYC 300. Phase 3 Assessment

Phase IV
EDD 400. Clerkship: Emergency Medicine
FAM 400. Clerkship: Family Medicine
Acting Internship (requirement met by a number of courses)
CCM 400 or ANS 400. Critical Care Selective
IHS 400. Improving Health Systems
INT 400. Successful Interning

Biochemistry

Jeffrey Hayes
Chair

Joshua Munger
PhD Program Director

Overview

We offer in-depth coursework and diverse research opportunities that focus on understanding the biochemical mechanisms of life's critical molecular processes.

World-class research in our laboratories exposes our students to a variety of the latest methods for sophisticated biochemical analysis, including mass spectrometry, crystallography, microcalorimetry, surface plasmon resonance, microarrays, fluorescence-activated cell sorting, light scattering, and spectroscopic methods (including fluorescence lifetime and energy transfer measurements), as well as modern methods for cell culture, protein purification, genetic analysis, and reconstitution of biochemical complexes and reactions.

The flexibility of our training program allows students to train in a number of exciting research areas, and often allows them to develop highly effective interdisciplinary collaborations, resulting in cutting-edge thesis projects.

Mission Statement and Strategic Goals

The primary goal of the biochemistry program is to guide students as they interrogate the molecular mechanisms that govern important biological processes, which will provide insight into how disruption of these mechanisms causes disease. As part of this goal, we aim to develop critically thinking, independent scientists who can become leaders in their field.

https://www.urmc.rochester.edu/education/graduate/phd/biochemistry.aspx

Graduate Faculty Information

Brian Altman, PhD, *Duke University*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Xin Bi, PhD, *Johns Hopkins University*
Professor
Primary Appointment(s): Biology

Paul Boutz, PhD, *University of California, Los Angeles*
Assistant Professor
Primary Appointment(s): Biochemistry, Biophysics

Paul Brookes, PhD, *Cambridge University*
Professor
Primary Appointment(s): Anesthesiology, Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Michael Bulger, PhD, *University of California, San Diego*
Associate Professor
Primary Appointment(s): Pediatrics

Gloria Culver, PhD, *University of Rochester*
Professor
Primary Appointment(s): Biology

Ian Dickerson, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

Mark Dumont, PhD, *Johns Hopkins University*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Dmitri Ermolenko, PhD, *Russian Academy of Sciences*
Associate Professor
Primary Appointment(s): Biochemistry and Biophysics

Sina Ghaemmaghami, PhD, *Duke University*
Professor
George Y. and Catherine H. Wu Professor in Chemistry
Primary Appointment(s): Biology
Joint Appointment(s): Chemistry

Vera Gorbunova, PhD, *Weismann Institute of Science*
Professor
Doris Johns Cherry Professor
Primary Appointment(s): Biology
Joint Appointment(s): Medicine, Geriatrics/Aging

Elizabeth Grayhack, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Biochemistry and Biophysics

Alan Grossfield, PhD, *Johns Hopkins University*
Associate Professor
Primary Appointment(s): Biochemistry and Biophysics

Isaac Harris, PhD, *University of Toronto*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pharmacology and Physiology

Jeffrey Hayes, PhD, *Johns Hopkins University*
Professor
Chair, Department of Biochemistry and Biophysics
Primary Appointment(s): Biochemistry and Biophysics

Clara Kielkopf, PhD, *California Institute of Technology*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Hartmut Land, PhD, *University of Heidelberg*
Professor
Chair, Department of Biomedical Genetics; Robert and Dorothy Markin Professorship
Primary Appointment(s): Biomedical Genetics

John Lueck, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neurology

Lynne E. Maquat, PhD, *University of Wisconsin–Madison*
Professor
J. Lowell Orbison Distinguished Service Alumni Professorship; Director, Center for RNA Biology
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Pediatrics

David Mathews, MD, PhD, *University of Rochester*
Professor
Program Director, PhD Biophysics; Lynne E. Maquat Distinguished Professor
Primary Appointment(s): Biochemistry and Biophysics

Margot Mayer-Proschel, PhD, *University of Wurzburg*
Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Stephano Spano Mello, PhD, *Universidad de São Paulo*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Anne Meyer, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Biology

Benjamin Miller, PhD, *Stanford University*
Professor
Dean's Professorship, Department of Dermatology
Primary Appointment(s): Dermatology

Joshua Munger, PhD, *University of Chicago*
Professor
Program Director, PhD Biochemistry
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Microbiology and Immunology

Patrick Murphy, PhD, *Cornell University*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Biology

Mitchell O'Connell, PhD, *University of Sydney*
Assistant Professor
Primary Appointment(s): Biochemistry and Biophysics

Eric Phizicky, PhD, *Cornell University*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Marlies Rossmann, PhD, *University of New York at Stony Brook;* MD, *Free University and Humboldt University*
Assistant Professor
Primary Appointment(s): Biomedical Genetics and Microbiology and Immunology (joint)

Elaine Sia, PhD, *Columbia University*
Professor
Primary Appointment(s): Biology

Laurie Steiner, MD, *Mount Sinai Medical Center*
Associate Professor
Vice Chair of Academic Affairs, Pediatrics; Assistant Director, MSTP Program
Primary Appointment(s): Pediatrics, Neonatology

Paula Vertino, PhD, *University at Buffalo*
Professor
Wilmot Distinguished Professorship in Cancer Genomics; Senior Associate Dean, Basic Research
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pathology and Lab Medicine

Eric Wagner, PhD, *Duke University*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Ning Wang, PhD, *Ohio State University*
Assistant Professor
Primary Appointment(s): Biology

Joseph Wedekind, PhD, *University of Wisconsin–Madison*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Peng Yao, PhD, *Chinese Academy of Sciences*
Associate Professor
Primary Appointment(s): Department of Medicine-Aab Cardiovascular Research Institute
Joint Appointment(s): Biochemistry and Biophysics

Yi-Tao Yu, PhD, *Case Western Reserve University*
Professor
Dean's Professorship of Biochemistry and Biophysics
Primary Appointment(s): Biochemistry and Biophysics

Admissions

Applying to Doctoral Programs

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required prior to matriculation in the form of an official transcript noting degree conferral. Students are accepted only for the fall semester; we don't have a spring admissions period. The program is fully funded with a tuition fellowship, competitive stipend, and health insurance.

We expect all application materials (with the exception of official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and test scores, and to require submission of official documentation at any point in the admissions review process. Applicants must complete the online application, provide a statement of purpose, upload copies of their transcript(s), and provide the information for three letters of recommendation. (Recommenders will receive an email explaining how to upload their letters.) Biochemistry does not require an essay or writing sample. The Graduate Record Examination (GRE) is optional for biochemistry, but if you feel your scores enhance your application, then we encourage you to submit them. Applicants whose native language is not English must demonstrate English proficiency by taking either the TOEFL, IELTS, or DuoLingo language exam.

The application fee waiver deadline is December 1, and the complete application deadline is December 15. Interviews typically take place in February and March, with offers released by the end of March. Responses are due by April 15.

Applying to Master's Programs

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required prior to matriculation in the form of an official transcript noting degree conferral.

We expect all application materials (with the exception of official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and test scores, and to require submission of official documentation at any point in the admissions review process. Applicants must complete the online application, provide a statement of purpose, upload copies of their transcript(s), and provide the information for three letters of recommendation. (Recommenders will receive an email explaining how to upload their letters.) Biochemistry does not require an essay or writing sample. The Graduate Record Examination (GRE) is optional for biochemistry, but if you feel your scores enhance your application, then we encourage you to submit them. Applicants whose native language is not English must demonstrate English proficiency by taking either the TOEFL, IELTS, or DuoLingo language exam.

The application fee waiver deadline is December 15. Offers of admission are typically released May to June 30, and responses from applicants are due July 1.

Academics

Master's Degrees and Requirements

The Plan A (terminal) MS degree is offered by the biochemistry program, subject to approval by the graduate studies director. No financial resources are provided by the biochemistry MS program for either tuition or stipend costs. These obligations must be borne by the candidate, alone or in conjunction with funds provided at the discretion of the advisor from the sponsoring advisor's budget. Any monetary compensation to MS candidates from the sponsoring advisor will be limited to the current stipend for PhD candidates.

Admission to the MS program will not be approved unless a letter from the faculty research sponsor is included with the University application forms. This letter must indicate the nature of the research project or area agreed upon and state that the faculty member intends to provide the required advisory input as well as laboratory space, supplies, and equipment needed to pursue the project.

At least one year (two semesters) of full-time enrollment or two years (four semesters) of part-time enrollment are required. (The equivalent of two years of full-time study is typical). In the first year, coursework requirements are fulfilled (30 hours) with the initiation of the research project. The second year is spent in research activity leading to the submission of the MS thesis. The program requires a minimum of one additional specific or elective course, totaling three credits or more. MS candidates are expected to attend the biochemistry student seminars. The remaining credits required to meet the 30 credit hours needed for the MS degree consist of credits from the student seminar course and research credit. Up to 10 hours of coursework may be taken before to formal admission (matriculation) into the program.

In Plan A, a research thesis must be developed from an independent research project accomplished under the supervision of a faculty member in the Department of Biochemistry. Format and preparation should follow guidelines set forth in The Preparation of Master's Theses, available in the department office. The final examination is administered by the thesis advisory committee following the presentation of the completed thesis. For MS candidates, the chairman of the examining committee is appointed by the graduate studies director.

Doctoral Degrees and Requirements

In the first year of the program, students typically enroll in semester-long courses. They also participate in the Department of Biochemistry and Biophysics' student seminar series, in which every graduate student in the program (except first-year students) delivers an annual seminar on their research. Coursework in the second year typically involves one additional elective course, allowing students to specialize in their respective disciplines.

Rotations in the first year of study in three different laboratories allow students to gain experience with methodology and instrumentation, and to become familiar with prospective research advisors for their thesis project. At the end of the first year, students choose a permanent advisor and embark on a PhD thesis research program. Students may choose any faculty member in the School of Medicine and Dentistry or a participating faculty member in the College of Arts and Sciences as their research advisor. Students must complete a one-semester teaching assistantship, typically in their second year.

A qualifying examination at the end of the second year helps determine the potential of the student for independent thought, experimental acumen, comprehension of the general field, and potential for exploiting a relevant problem in a scientifically sound manner. The MS degree is awarded upon successful completion of this examination.

The student's thesis advisory committee must approve the writing of the PhD thesis at a formal committee meeting four to six months before defense. The PhD is awarded based on the development of an independent thesis research project as well as an oral examination and a written dissertation describing the rationale, methodology, results, conclusions, and significance of the project.

Students in the biochemistry PhD program can elect for the cancer biology or bioinformatics concentration. These reflect strong interest for our faculty and students and are areas where enhanced skills and expertise will serve our students in their careers.

Cancer Biology Concentration

This concentration adds coursework in clinical and translational cancer biology to our existing course on the molecular and cell biology of cancer. Students also participate in an ongoing seminar series for exposure to the most cutting-edge scientific advances.

Bioinformatics Concentration

This concentration focuses on biology and medically related informatics work most appropriate to trainees in various aspects of biochemistry. As with the cancer biology concentration, it requires students to take a course covering the analysis of biomedical big data as well as a seminar series focused on recent advances in the field. One of these courses involves computational approaches to large data sets, and the other focuses on statistical analysis. As indicated in the curriculum, there is some leeway in the courses allowed; students can tailor their course selection to the types of statistical problems and computational approaches that apply best to their research projects.

GRADUATE COURSE TITLES

BCH 412. Advanced Topics in Biological Macromolecules
BCH 501/BCH 502. Biochemistry Student Seminar
BCH 515. Critical Thinking in Research Science
BCH 517. Topics in Cellular, Biochemical and Molecular Sciences
BCH 521. Bioinformatics for Life Scientists
BCH 595. PhD Research
BIO 415. Molecular Biology of Cell Signaling
BIO 422. Biology of Aging
BIO 426 Developmental Biology
BIO 453. Computational Biology
BIO 457. Applied Genomics
BPH 411 Methods in Structural Biology
BPH 509 Molecular Biophysics
BPH 567. Writing Proposals in BPH
BST 457. Applied Statistics in the Biomedical Sciences
BST 432. High Dimensional Data Analysis
BST 434. Genomic Data Analysis
BST 463 Introduction to Biostatistics
BST 464 Applied Linear Regression
CHEM 411 Inorganic Chemistry I
CHEM 415 Group Theory
CHEM 423 NMR Spectroscopy
CHEM 440 Bio Organic Chemistry
DSC 462. Computational Introduction to Statistics
GEN 507. Advanced Genetics and Genomics
IND 408. Advanced Biochemistry
IND 419. Introduction to Quantitative Biology
IND 431. Foundations in Modern Biology I
IND 432. Foundations in Modern Biology II
IND 443 Eukaryotic Gene Regulation
IND 447 Signal Transduction
IND 484. Current Topics in Bioinformatics
IND 501. Ethics and Professional Integrity in Research
IND 507. Cancer Biology Seminar
IND 517. Clinical and Translational Oncology
MBI 421 Microbial Genetics & Physiology
MBI 456 General Virology
MBI 473 Immunology
PHP 403 Human Cell Physiology
PHP 404 Principles in Pharmacology
PTH 507. Cancer Biology

Biophysics

Jeffrey Hayes
Chair

David Mathews
PhD Program Director

Overview

The Biophysics program prepares students for careers in research and teaching in academic and industrial settings by providing a solid background in physical and biomedical sciences while involving them in state-of-the art research projects. BSCB offers a diverse research program at the forefront of scientific knowledge. Research areas include cellular and membrane biophysics, genomics, macromolecular folding and design, membrane proteins, nucleic acid structure and function, and protein structure and function. The flexibility of our training program allows students to train in a number of exciting research areas, and often allows students to develop highly effective interdisciplinary collaborations, resulting in cutting edge thesis projects.

Mission Statement and Strategic Goals

The mission of the program is to provide cutting edge training to our PhD students in the physics of biomolecules. This training includes professional development in scientific reasoning, writing, critically assessing the literature, and presenting. Research groups affiliated with the program develop and use quantitative, structural, and computational methods to measure, quantify, and model biomolecules and their interactions. Our vision is that these interactions provide the means for rigorously understanding biology and improving human health. Graduates of our program are prepared for careers that use physical methods to understand biomolecules.

Additionally, the program provides a nucleus for the biophysics community at the University of Rochester. An annual retreat brings together biophysics faculty, students, postdoctoral fellows, and researchers at the University. Seminars hosted by the Department of Biochemistry and Biophysics are also an important part of the training and community.

https://www.urmc.rochester.edu/education/graduate/phd/biophysics.aspx

Graduate Faculty Information

Andrew Berger, PhD, *Massachusetts Institute of Technology*
Professor
Primary Appointment(s): Optics
Joint Appointment(s): Biomedical Engineering

Paul Boutz, PhD, *University of California, Los Angeles*
Assistant Professor
Primary Appointment(s): Biochemistry and Biophysics

Kara Bren, PhD, *California Institute of Technology*
Professor
Richard S. Eisenberg Professor of Chemistry; Chair, Department of Chemistry
Primary Appointment(s): Chemistry

Regine Choe, PhD, *University of Pennsylvania*
Associate Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Electrical and Computer Engineering

Mark Dumont, PhD, *Johns Hopkins University*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Dmitri Ermolenko, PhD, *Russian Academy of Sciences*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Sina Ghaemmaghami, PhD, *Duke University*
Professor
George Y. and Catherine H. Wu Professor in Chemistry
Primary Appointment(s): Biology
Joint Appointment(s): Chemistry

Alan Grossfield, PhD, *Johns Hopkins University*
Associate Professor
Primary Appointment(s): Biochemistry and Biophysics

Jeffrey Hayes, PhD, *Johns Hopkins University*
Professor
Chair, Department of Biochemistry and Biophysics
Primary Appointment(s): Biochemistry and Biophysics

Yishu Jiang, PhD, *Northwestern University*
Assistant Professor
Primary Appointment(s): Chemistry

Paul Kammermeier, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Clara Kielkopf, PhD, *California Institute of Technology*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Todd Krauss, PhD, *Cornell University*
Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Optics

David MacLean, PhD, *McGill University*
Associate Professor
Paul Sark Professorship in Pharmacology
Primary Appointment(s): Pharmacology and Physiology

Lynne E. Maquat, PhD, *University of Wisconsin–Madison*
Professor
J. Lowell Orbison Distinguished Service Alumni Professorship; Director, Center for RNA Biology
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Pediatrics

David Mathews, MD, PhD, *University of Rochester*
Professor
Program Director, PhD Biophysics; Lynne E. Maquat Distinguished Professor
Primary Appointment(s): Biochemistry and Biophysics

David McCamant, PhD, *University of California, Berkeley*
Associate Professor
Primary Appointment(s): Chemistry

James McGrath, PhD, *Massachusetts Institute of Technology*
Professor
Dean's Professor
Primary Appointment(s): Biomedical Engineering

Anne Meyer, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Biology

Benjamin Miller, PhD, *Stanford University*
Professor
Dean's Professorship, Department of Dermatology
Primary Appointment(s): Dermatology

Joshua Munger, PhD, *University of Chicago*
Professor
Program Director, PhD Biochemistry
Primary Appointment(s): Biochemistry and Biophysics

Mitchell O'Connell, PhD, *University of Sydney*
Associate Professor
Primary Appointment(s): Biochemistry and Biophysics

Makaía Papasergi-Scott, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Biochemistry and Biophysic
Joint Appointment(s): Department of Pharmacology and Physiology

Eric Phizicky, PhD, *Cornell University*
Professor
Dean's Professor
Primary Appointment(s): Biochemistry and Biophysics

Lewis Rothberg, PhD, *Harvard University*
Professor
Primary Appointment(s): Chemistry
Joint Appointment(s): Chemical Engineering

Gaurav Sharma, PhD, *North Carolina State University*
Professor
Primary Appointment(s): Electrical and Computer Engineering
Joint Appointment(s): Computer Science, Biostatistics and Computation Biology

Juilee Thakar, PhD, *University of Wurzburg*
Associate Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Biostatistics and Computational Biology, Biomedical Genetics

Eric Wagner, PhD, *Duke University*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Richard Waugh, PhD, *Duke University*
Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Biochemistry and Biophysics

Joseph Wedekind, PhD, *University of Wisconsin–Madison*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Andrew White, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Chemical Engineering

Axel Wismüller, MD, *PhD, Technical University of Munich*
Professor
Primary Appointment(s): Imaging Science
Joint Appointment(s): Electrical and Computer Engineering

David Yule, PhD, *University of Liverpool*
Professor
Louis C. Lasagna Professorship in Experimental Therapeutics
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Center for Oral Biology; Medicine–Gastroenterology/Hepatology

Admissions

Applying to Doctoral Programs

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required prior to matriculation in the form of an official transcript noting degree conferral. Students are accepted only for the fall semester; there is no spring admissions period. The program is fully funded with a tuition fellowship, competitive stipend, and health insurance.

Rochester reserves the right to verify the accuracy of all transcripts and test scores, and to require submission of official documentation at any point in the admissions review process. Applicants must complete the online application, provide a statement of purpose, upload copies of their transcript(s), and provide the information for three letters of recommendation. (Recommenders will receive an email explaining how to upload their letters.) Biophysics does not require an essay or writing sample. The Graduate Record Examination (GRE) is optional for biophysics, but if you feel your scores enhance your application, then we encourage you to submit them. Applicants whose native language is not English must demonstrate English proficiency by taking either the TOEFL, IELTS, or DuoLingo language exam.

The application fee waiver deadline is December 1, and the complete application deadline is December 15. Interviews typically take place in February and March, with offers released by the end of March. Responses are due by April 15.

Academics

Master's Degrees and Requirements

The program awards an *en passant* master of science degree in biophysics to students upon successful completion of their qualifying examination. The program does not offer a stand-alone master's degree.

Doctoral Degrees and Requirements

In the first year of the program, students typically enroll in semester-long courses. They also participate in the Department of Biochemistry and Biophysics' student seminar series, in which each graduate student in the program (except first-year students) delivers an annual seminar on their research. Coursework in the second year typically involves one additional elective course, allowing students to specialize in their respective disciplines.

Rotations in the first year of study in three different laboratories allow students to gain experience with methodology and instrumentation, and to become familiar with prospective research advisors for their thesis project. At the end of the first year, students choose a permanent advisor and embark on a PhD thesis research program. Students may choose any faculty member in the School of Medicine and Dentistry or a participating faculty member in the College of Arts and Sciences as their research advisor. Students must complete a one-semester teaching assistantship, typically in their second year.

A qualifying examination at the end of the second year helps determine the potential of the student for independent thought, experimental acumen, comprehension of the general field, and potential for exploiting a relevant problem in a scientifically sound manner.

The student's thesis advisory committee must approve the writing of the PhD thesis at a formal committee meeting four to six months before defense. The PhD is awarded based on the development of an independent thesis research project as well as an oral examination and a written dissertation describing the rationale, methodology, results, conclusions, and significance of the project.

GRADUATE COURSE TITLES

BCH 412. Advanced Topics in Biological Macromolecules
BCH 515. Critical Thinking in Research Science
BCH 517. Topics in Cellular Biochemical and Molecular Sciences
BCH 521. Bioinformatics for Life Scientists
BIO 402. Molecular Biology
BME 442. Microbiomechanics with Microfluidics
BPH 411. Methods in Structural Biology
BPH 571/BPH 572. Biophysics Student Seminar
BPH 509. Molecular Biophysics
BPH 567. Writing Proposals in BPH
BPH 592. Special Topics in Biophysics – Math for Molecular Biophysics
BPH 595. PhD Research
BST 430. Intro to Statistical Computing
BST 434. Genomic Data Analysis
CHEM 423. NMR Spectroscopy CHEM 469. Computational Chemistry
CHEM 416. X-Ray Crystallography
CHEM 423. NMR Spectroscopy
CHEM 440. Bioorganic Chemistry
CHEM 451. Quantum Chemistry I
CHM 469. Computational Chemistry
IND 408. Advanced Biochemistry
IND 419. Introduction to Quantitative Biology
IND 431. Foundations in Modern Biology I
IND 443. Eukaryotic Gene Regulation
IND 447. Signal Transduction
IND 501. Ethics and Professional Integrity in Research
MBI 473. Immunology
NSC 512. Cellular Neuroscience
STAT 212. Applied Statistics I

Biostatistics

Robert L. Strawderman
Chair

Tong Tong Wu
MS Program Director

Overview

The Department of Biostatistics and Computational Biology offers the master of science (MS) program in biostatistics. The program is intended primarily for students who wish to follow careers in health-related professions, such as those in the pharmaceutical industry and in biomedical or clinical research organizations. The MS program can be completed in one year.

The curriculum provides students with an appreciation for applied problems in biomedical research and the skills necessary to succeed in collaborative research environments. An important goal is to produce graduates with a command of technical skills and the ability and experience to use them appropriately.

Faculty participate fully in graduate teaching, and individual attention is given to each student through intensive advising. Program faculty have research interests and expertise in virtually all areas of modern theoretical and applied statistics. Faculty are involved in wide-ranging collaborative activity with basic science and clinical departments in the School of Medicine and Dentistry. This environment is ideally suited for training in research in statistical methodology, collaborative research, and consulting.

Mission Statement and Strategic Goals

Our mission is to educate and mentor the next generation of statisticians at the interface of methodological and applied statistical research in a diverse, equitable, and inclusive environment that equips them with a solid foundation in statistics, enabling them to assume leadership roles in academia, government, and industry.

https://www.urmc.rochester.edu/biostat/gradprograms.aspx

Graduate Faculty Information

Christopher Beck, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Orthopaedics, Center for Health and Technology

Changyong Feng, PhD, *University of Rochester*
Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Anesthesiology and Perioperative Medicine, Dentistry

Brent Johnson, PhD, *North Carolina State University*
Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Ophthalmology

Seong-Hwan Jun, PhD, *University of British Columbia*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology

Tanzy Love, PhD, *Iowa State University*
Associate Professor
Primary Appointment(s): Biostatistics and Computational Biology

Matthew McCall, PhD, *Johns Hopkins University*
Associate Professor
Director, PhD Statistics Program
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Biomedical Genetics

Michael McDermott, PhD, *University of Rochester*
Professor
Associate Chair, Biostatistics and Computational Biology
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Center for Health and Technology

Samuel Norman-Haignere, PhD, *Massachusetts Institute of Technology*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neuroscience, Biomedical Engineering

David Oakes, PhD, *London University*
Professor
Primary Appointment(s): Biostatistics and Computational Biology

Derick Peterson, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Wilmot Cancer Institute

Xing Qiu, PhD, *University of Rochester*
Professor
Primary Appointment(s): Biostatistics and Computational Biology

Michael Sohn, PhD, *University of Arizona*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology

Robert Strawderman, ScD, *Harvard University*
Professor
Donald M. Foster, MD Distinguished Professorship in Biostatistics; Chair, Biostatistics and Computational Biology
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Center for Health and Technology

Sarah (Sally) Thurston, PhD, *Harvard University*
Professor
Biostatistics and Computational Biology Diversity and Inclusion Officer
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Environmental Medicine

Abdus Wahed, PhD, *North Carolina State University*
Professor
Associate Chair, Biostatistics and Computational Biology
Primary Appointment(s): Biostatistics and Computational Biology

Tong Tong Wu, PhD, *University of California, Los Angeles*
Professor
Director, MA Statistics Program; Director, MS Biostatistics Program
Primary Appointment(s): Biostatistics and Computational Biology

Admissions

Applying to Master's Programs

The MS in biostatistics program is open to students with a substantial background in statistics. For entry into the program, three semesters of calculus, a course in linear and/or matrix algebra, a course in probability, and a course in mathematical statistics are required. A course in applied statistics is recommended.

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Applicants must submit the following materials for consideration in their online application: statement of purpose, transcripts from all previous college and graduate programs, and three letters of recommendation. Most international applicants also need to provide evidence of English proficiency (such as a TOEFL, IELTS, or DuoLingo test score unless approved for a waiver). Applicants may choose to submit additional materials, such as a CV/resume and research papers.

A request for part-time study in the MS program should be identified in the online application and is subject to the MS program director's approval. Applicants interested in part-time study are encouraged to contact the department before submitting the application.

Applicants interview with at least two program faculty members before an admissions offer is recommended. Students entering with advanced training in statistics or biostatistics may transfer credits at the discretion of the MS program director and in accordance with University policy.

Current and eligible University of Rochester undergraduate students have the opportunity to pursue the MS degree through an accelerated option (4+1). Applications should be submitted before the end of the junior year to the Department of Biostatistics and Computational Biology. Accepted students may complete up to three graduate-level BST courses during their senior year that count towards both their Bachelor's degree and the MS in biostatistics degree. Students are assigned a biostatistics faculty advisor, in addition to their undergraduate academic advisor.

Academics

Master's Degrees and Requirements

The MS degree in biostatistics prepares students to work as master's-level statisticians. The MS degree requires satisfactory completion of at least 32 credits and a final comprehensive oral exam. There are no thesis or language requirements.

The typical MS program of study includes six courses and the eight-credit capstone project. Course substitutions may be made with approval from the MS program director. The capstone project requirement is met by working with Medical Center investigators on an applied project. Students are required to write a formal report summarizing the findings from their project. These findings are presented in a public lecture.

Required Courses

- Introduction to Statistical Computing
- Statistical Inference I
- Biostatistical Methods I
- Biostatistical Methods II
- Design of Clinical Trials

Elective Course (choose one)

- Bayesian Inference
- Linear Models
- Genomic Data Analysis

Capstone Project

A typical full-time program for the MS consists of one core year (two semesters) of coursework followed by the capstone project. The capstone project is normally done in the summer after the core program. A comprehensive oral exam is administered upon completion of coursework and the capstone project.

GRADUATE COURSE TITLES

BST 411. Statistical Inference I
BST 413. Bayesian Inference
BST 426. Linear Models
BST 430. Introduction to Statistical Computing
BST 434. Genomic Data Analysis
BST 461. Biostatistical Methods I
BST 462. Biostatistical Methods II
BST 465. Design of Clinical Trials
BST 493. Capstone Project

Clinical Bioethics

Advanced Certificate

Lainie Ross
Department of Health Humanities & Bioethics Chair
Bryanna Moore
Clinical Bioethics Program Director

Overview

The advanced certificate in clinical bioethics is a multidisciplinary graduate credential administered by the University of Rochester's Department of Health Humanities and Bioethics in the School of Medicine and Dentistry that prepares students to identify, analyze, and discuss the ethical considerations and/or conflicts that arises in the context of health care decision-making.

Mission Statement and Strategic Goals

This program addresses stated priorities in the University of Rochester School of Medicine and Dentistry and University of Rochester Medical Center strategic plans. This program reinforces the biopsychosocial approach to patient care and develops clinical skills, knowledge, and attitudes consistent with health care professional core competencies.

Clinical skills include

- Ethical and humanistic patient care
- Interpersonal and communicative skills
- Professionalism

https://www.urmc.rochester.edu/education/graduate/certificate/advanced-certificate-in-clinical-bioethics.aspx

Graduate Faculty Information

Nicholas Mercado, Dr.P.H., *New York Medical College*
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics

Bryanna Moore, PhD, *Monash University*
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics
Joint Appointment(s): Philosophy

Marjorie Shaw, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Health Humanities and Bioethics

Admissions

Applying to Advanced Certificates

This program is open to all graduate students enrolled in a health care related program, all faculty and staff at the University of Rochester Medical Center, all faculty and staff at all UR Medicine affiliated institutions, all faculty and staff affiliated with other health care institutions, and individuals with a bachelor's degree and demonstrated interest in healthcare. Candidates for admission to the program must have earned a baccalaureate degree, or its equivalent.

Required Application Materials

Applicants must submit the following:

- The online application
- Personal statement
- Writing sample
- Additional materials (optional)
- Transcripts from all previous college and graduate programs
- English proficiency documents (for applicants whose native language is not English)
- Two letters of recommendation
- $60 application fee

Promising applicants who do not precisely meet admissions requirements will be further evaluated by the admissions committee on an individual basis, using academic transcripts, personal statements, letters of recommendation, and other supporting evidence.

Academics

Advanced Certificate and Requirements

Advanced Certificate and Requirements: Students must complete 9 credits of coursework to be awarded the advanced certificate in clinical bioethics.

GRADUATE COURSE TITLES: REQUIRED COURSES FOR ADVANCED CERTIFICATE IN CLINICAL BIOETHICS

MHB 472: Philosophical Foundations of Bioethics
MHB 482: Clinical Ethics & the Law
MHB 410: Clinical Bioethics

Clinical Investigation

Edwin van Wijngaarden
Program Director

Overview

Our program prepares clinician-scientists to carry out patient-based research in the development of interventions and technologies to ensure the highest levels of patient safety and quality of care. Our MS program sits within a large urban medical center and all its clinical research resources and collaborative faculty.

Mission Statement and Strategic Goals

Established in 2007 as part of an NIH Clinical and Translational Sciences Award, the MS in clinical investigation program is a 31-credit course of study that provides students with the skills and methodologies needed to:

- Conduct rigorous clinical studies,
- Improve evidence-based clinical decision-making, and evaluate health care services.

https://www.urmc.rochester.edu/education/graduate/masters-degrees/clinical-investigation.aspx

Graduate Faculty Information

Paula Amina Alio, PhD, *University of Southern Florida*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, Nursing

Robert Charles Block, MD, *New Jersey Medical School*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, Medicine–Cardiology

Shubing Cai, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Public Health Sciences

Erin Campbell, MD, *University at Buffalo*
Assistant Professor of Clinical Public Health Sciences
Primary Appointment(s): Public Health Sciences

Francisco Cartujano Barrera, PhD, *Seton Hall University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Wilmot Cancer Institute, Center for Community Health and Prevention

Ann M. Dozier, PhD, *University of Rochester*
Professor
Albert David Kaiser Chair of Public Health and Preventive Medicine
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Isabel D. Fernandez, PhD, *University of Minnesota*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Theresa Marie Green, PhD, *Western Michigan University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Nursing, Center for Community Health and Prevention

Wyatte C. Hall, PhD, *Gallaudet University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Neurology, Obstetrics and Gynecology, Pediatrics, Center for Community Health and Prevention

Elaine L. Hill, PhD, *Cornell University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Economics (AS&E), Obstetrics and Gynecology

Todd A. Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Environmental Medicine

Yue Li, PhD, *University of Rochester*
Professor
Primary Appointment(s): Public Health Sciences

Yu Liu, PhD, *Vanderbilt University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Camille A. Martina, PhD, *University of Rochester*
Research Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine

Mostafa Mohamed, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences

Scott McIntosh, PhD, *University of Miami*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Wilmot Cancer Institute, Center for Community Health and Prevention, Dentistry, Orthopaedics

Reza Yousefi Nooraie, PhD, *McMaster University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Deborah J. Ossip, PhD, *University of Pittsburgh*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Jose G. Perez-Ramos, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Obstetrics and Gynecology, Center for Community Health and Prevention

David Rich, ScD, *Harvard University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine, Environmental Medicine

Christopher Seplaki, PhD, *University of Wisconsin–Madison*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Psychiatry

James Tacci, MD, *University of Rochester;* JD, *Syracuse University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Center of Nursing Entrepreneurship

Kelly N. Thevenet-Morrison, MS, *Rutgers University*
Lead Programmer Analyst
Primary Appointment(s): Public Health Sciences

Edith Williams, PhD, *University at Buffalo*
Professor
Dean's Associate Professorship
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine–Allergy, Immunology and Rheumatology; Center for Community Health and Prevention; Clinical and Translational Research

Edwin van Wijngaarden, PhD, *University of North Carolina at Chapel Hill*
Professor
Associate Chair, Public Health Sciences
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics, Dentistry, Community Health and Prevention

Admissions

Applying to Master's Programs

Application to the program is encouraged from people with a special interest or experience in the health field, from those in health-related professions, and from those with professional degrees in medicine and other fields related to health care. Candidates for admission to the program must have earned a baccalaureate degree or its equivalent.

Application Requirements

We expect all application materials (exception official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

- SOPHAS application
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Three letters of recommendation
- Applicants whose native language is not English must demonstrate English proficiency by providing official scores within two years of the original test date. Acceptable test types: official TOEFL iBT or ITP Plus (SMD school code: 2948; SOPHAS application code: 5688), IELTS, and DuoLingo.
- CV or resume (optional)
- Research papers, publications, and other original works (optional)

Please do not include secondary school documentation or financial documentation as these are not used during the admissions process. Application deadlines are May 1 for the fall semester and November 1 for the spring semester.

Academics

Master's Degree Requirements

The Master of Science in Clinical Investigation includes 31 credits of required coursework. This includes epidemiology, biostatistics, and data management core methods courses, ethics, elective courses, and thesis research (six credits). Students present their thesis proposal in a public forum and submit a final thesis document to their thesis committee for approval.

GRADUATE COURSE TITLES

PM 401. Quantitative Methods
PM 410. Introduction to Data Management and Analysis
PM 415. Principles of Epidemiology
PM 460. Master's Research
IND 501. Ethics and Professional Integrity in Research
PM 413. Field Methods in Epidemiology
PM 416. Advanced Epidemiologic Methods
PM 412. Survey Research
PM 413. Field Methods in Epidemiology
PM 414. History of Epidemiology
PM 417. Molecular Epidemiology
PM 418. Cardiovascular Epidemiology and Prevention
PM 419. Recruitment and Retention of Human Subjects in Clinical Research
PM 420. American Health Policy and Politics
PM 421. U.S. Health Care System: Financing, Delivery, and Performance
PM 422. Quality of Care and Risk Adjustment
PM 424. Epidemiology and Prevention of Chronic Disease
PM 426. Social and Behavioral Medicine
PM 430. Psychology in Health Services Research
PM 442. Nutritional Epidemiology
PM 443. Maternal and Child Health
PM 445. Introduction to Health Services Research
PM 451. Infectious Disease Epidemiology
PM 458. Qualitative Health Research
PM 461. Program Evaluation
PM 466. Cancer Epidemiology
PM 469. Multivariate Models for Epidemiology
PM 472. Measurement and Evaluation of Research Instruments
PM 484. Medical Decision Making and Cost Effectiveness Research
PM 488. Experimental Therapeutics
PM 489. Injury Epidemiology and Emergency Care Research Methods
BST 465. Design of Clinical Trials

Clinical/Medical Technology

Christa Whitney-Miller
Chair
Jennifer Findeis-Hosey
Vice Chair for Education
Audrey Jajosky, Vicki Roberts
CMT Program Directors

Overview

The program is designed to provide graduates with the entry level competencies required to succeed in the clinical laboratory. Students gain understandings of clinical laboratory science by correlating laboratory results with the diagnosis, prognosis, and disease management of patients in the clinical setting.

The 35.5 credit, full-time program consists of a fall and a spring semester. The curriculum is made up of didactic and clinical learning experiences in pre-analytic, analytic, and post-analytic concepts of: clinical chemistry, clinical hematology and hemostasis, immunohematology, microbiology, and urinalysis and body fluids. Oversight of the program is managed by the Department of Pathology and Laboratory Medicine. The learning experiences occur Monday through Friday from 8 a.m. to 4:30 p.m. over a 39-week period. (This includes three weeks of vacation.) Clinical practicum is scheduled daily from 8 a.m. to 1 p.m., and lectures are held from 2 to 4:30 p.m.

Graduates must pass the American Society of Clinical Pathology Board examination and achieve a state license to practice the profession of clinical laboratory technology in New York State. The Department of Pathology and Laboratory Medicine (UR Medicine Labs) is a division of URMC that provides clinical laboratory services to Strong Memorial Hospital and its affiliates. UR Medicine Labs is the largest medical laboratory in the region with 1,200 members, including pathologists, research faculty, licensed laboratory professionals, and over 400 employees in pre-analytic operations and support. The department encompasses 28 clinical laboratories, 16 research laboratories, five satellite laboratories for the Wilmot Cancer Institute, a pathology residency program, and a PhD program in pathology. The department bills over 10 million tests per year on average.

UR Medicine Labs has 157,000 square feet of clinical and research laboratories, offices, and conference rooms. The labs are in two locations; the Core Labs are at Strong Memorial Hospital, and the Central Labs are in suburban Henrietta. UR Medicine Labs provides the personnel, faculty, lecture space, clinical training space, support personnel, finances, laboratory equipment, tools, and supplies necessary to support the program mission.

Mission Statement and Strategic Goals

Our mission is to educate future clinical laboratory technologists who are committed, dedicated, skilled, and innovative in their work. We seek to achieve this goal by using educational experiences that emphasize patient care in the cultivation of excellence, competency, teamwork, and integrity in all aspects of laboratory science.

Program Goals

Upon completing the program, graduates will:

- Have knowledge of and adhere to institutional, regional, national, and international safety regulations in the clinical laboratory setting
- Achieve the full range of pre-analytic, analytic, and post-analytic medical laboratory science competencies as entry-level clinical laboratory technologists in: clinical chemistry; hematology/hemostasis, urinalysis, and body fluids; immunohematology/transfusion medicine; immunology; microbiology; and laboratory management and operations
- Accurately correlate laboratory findings to the diagnosis, prognosis, and disease management in the clinical and/or research setting
- Effectively troubleshoot outcomes that do not conform to prescribed protocols or outcomes
- Demonstrate leadership capabilities. Have knowledge of the basic principles of management, education, regulatory oversight, quality management, continuous process improvement, and operations in the clinical laboratory setting
- Meet the licensure requirements in practice of clinical laboratory technology in the state of New York.
- Be eligible for certification by the ASCP as medical laboratory scientists

https://www.urmc.rochester.edu/education/graduate/certificate/clinical-medical-technology-certificate.aspx

Graduate Faculty Information

W. Richard Burack, MD, PhD, *University of Virginia*
Professor
Vice Chair for Clinical Operations
Primary Appointment(s): Pathology and Laboratory Medicine
Joint Appointment(s): Cancer Center

Dwight J. Hardy, PhD, *Louisiana State University*
Professor
Director, Clinical Microbiology Laboratories
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Pathology and Laboratory Medicine

Audrey Jajosky, MD, PhD, *West Virginia University*
Assistant Professor
Associate Director, Molecular Diagnostics Laboratory
Primary Appointment(s): Department of Pathology and Laboratory Medicine

Y. Victoria Zhang, PhD, *University of Minnesota*
Professor
Director, Vice Chair for Clinical Enterprise Strategy
Primary Appointment(s): Department of Pathology and Laboratory Medicine

Admissions

Applying to Advanced Certificates

Enrollment in the program occurs once a year in mid-August (fall semester). The application system opens in September for the following academic year, and final decisions are made by May of the following year. Admissions occur on a rolling basis.

Academic requirements: a bachelor's degree in the biological, chemical, or physical sciences with successful completion of the following courses and subject areas that include laboratory content prior to the first day of class: inorganic chemistry; analytic chemistry and/or biochemistry physiology, with anatomy content; molecular biology and diagnostics; and microbiology. The following courses are also required: organic chemistry, statistics, and immunology. Minimum qualifications are an overall GPA of 3.0 and a math/science GPA of 2.8.

Required Application Materials

- Completed online application
- Copy of transcript(s) (an unofficial transcript will suffice during the application process)
- Two professional letters of recommendation
- CV/resume
- Personal statement
- A $60 application fee

Academics

Advanced Certificate and Requirements

The two-semester advanced certificate program in clinical/medical technology is designed specifically for graduates to be eligible for careers as clinical laboratory technologists, also known as medical laboratory scientists. The program meets both national accreditation and New York State licensing standards and regulations. The program admits only for the fall semester and is completed the following spring semester.

The program consists of 18.5 credit hours of clinical training and 17 credit hours of didactic coursework.

GRADUATE COURSE TITLES

CMT 401. Essentials of Clinical Laboratory Science
CMT 402. Clinical Practicum I
CMT 403. Clinical Practicum II
CMT 404. Special Topics in Clinical Laboratory Science
CMT 405: Laboratory Management and Operations
CMT 411. Clinical Chemistry I
CMT 412. Clinical Hematology I
CMT 413. Principles of Immunohematology I
CMT 414. Clinical Laboratory Microbiology I
CMT 421. Clinical Chemistry II
CMT 422. Clinical Hematology II
CMT 423. Principles of Immunohematology II
CMT 424. Clinical Laboratory Microbiology II

Clinical Research Methods

Advanced Certificate

Edwin van Wijngaarden
Program Director

Overview

The advanced certificate in clinical research methods (online only) is designed to give individuals the knowledge and tools needed to conduct clinical research.

Mission Statement and Strategic Goals

The program provides researchers and other interested individuals with a practical understanding of quantitative and qualitative research methods. Quantitative methods include survey development, case control studies, cohort studies, randomized controlled trials, pragmatic trials, and quasi experimental methods. Qualitative research methods include ethnographic interviewing, participant observation, focus groups, and community-based participatory research.

https://www.urmc.rochester.edu/education/graduate/certificate/advanced-certificate-in-clinical-research-meth.aspx

Graduate Faculty Information

Paula Amina Alio, PhD, *University of Southern Florida*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, School of Nursing

Robert Charles Block, MD, *New Jersey Medical School*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, Medicine–Cardiology

Shubing Cai, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Public Health Sciences

Erin Campbell, MD, *University at Buffalo*
Assistant Professor of Clinical Public Health Sciences
Primary Appointment(s): Public Health Sciences

Francisco Cartujano Barrera, PhD, *Seton Hall University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Cancer Center, Center for Community Health and Prevention

Ann M. Dozier, PhD, *University of Rochester*
Professor
Albert David Kaiser Chair of Public Health and Preventive Medicine
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Isabel D. Fernandez, PhD, *University of Minnesota*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Theresa Marie Green, PhD, *Western Michigan University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Nursing (SON), Center for Community Health and Prevention

Wyatte C. Hall, PhD, *Gallaudet University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Neurology, Obstetrics and Gynecology, Pediatrics, Center for Community Health and Prevention

Elaine L. Hill, PhD, *Cornell University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Economics (AS&E), Obstetrics and Gynecology

Todd A. Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Environmental Medicine

Yue Li, PhD, *University of Rochester*
Professor
Primary Appointment(s): Public Health Sciences

Yu Liu, PhD, *Vanderbilt University*
AssociateProfessor
Primary Appointment(s): Public Health Sciences

Camille A. Martina, PhD, *University of Rochester*
Research Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine

Scott McIntosh, PhD, *University of Miami*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Cancer Center, Center for Community Health and Prevention, Dentistry, Orthopaedics

Mostafa Mohamed, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences

Reza Yousefi Nooraie, PhD, *McMaster University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Deborah J. Ossip, PhD, *University of Pittsburgh*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Jose G. Perez-Ramos, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Obstetrics and Gynecology, Center for Community Health and Prevention

David Rich, ScD, *Harvard University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine, Environmental Medicine

Christopher Seplaki, PhD, *University of Wisconsin–Madison*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Psychiatry

James Tacci, MD, *University of Rochester;* JD, *Syracuse University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Center of Nursing Entrepreneurship

Kelly N. Thevenet-Morrison, MS, *Rutgers University*
Lead Programmer Analyst
Primary Appointment(s): Public Health Sciences

Edith Williams, PhD, *University at Buffalo*
Professor
Dean's Associate Professorship
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine; Allergy, Immunology and Rheumatology; Center for Community Health and Prevention; Clinical and Translational Research

Edwin van Wijngaarden, PhD, *University of North Carolina at Chapel Hill*
Professor
Associate Chair, Public Health Sciences
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics, Dentistry, Community Health and Prevention

Admissions

Applying to Advanced Certificates

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Application Requirements

We expect that all application materials (with the exception of official score reports) be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

- Online application (recommended browser: Google Chrome)
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Official TOEFL (institution code: 2948) or IELTS score (if native language is not English)
- CV or resume
- Research papers, publications, and other original works for consideration (not required)

Please do not include secondary school documentation or financial documentation as these are not used during the admissions process. Application deadlines are May 1 for the fall semester and November 1 for the spring semester.

Academics

Advanced Certificates and Requirements

The advanced certificate program is a post-baccalaureate course of academic study designed for students and practitioners who seek to enhance their professional development. Certificates consist of four or five courses for a total of 12 to 15 credits.

GRADUATE COURSE TITLES

PM 415. Principles of Epidemiology
PM 458. Qualitative Health Care Research
PM 413. Field Methods in Epidemiology
PM 418. Cardiovascular Disease Epidemiology and Prevention
PM 419. Recruitment and Retention of Human Subjects in Clinical Research
PM 445. Introduction to Health Services Research and Policy

Epidemiology

Ann Dozier
Chair

Edwin van Wijngaarden
Department Associate Chair and Director, Advanced Epidemiology Certificate Program

David Rich
Director, Epidemiology PhD and MS Programs

Overview

Since 2002, the PhD in epidemiology program in the Department of Public Health Sciences has trained innovative and productive epidemiologists in the study of the distribution and determinants of disease in human populations, both locally and nationally/internationally. Set within a large medical center with all its clinical research resources and collaborative faculty, our doctoral program prepares students for academic careers focused on research and education in the public health and medical fields, as well as careers in private industry, government, and nonprofit agencies. Our students come from around the world; while in Rochester, they learn and grow in an academic environment that nurtures individuality, scientific inquiry, intellectual discussion, and personal development.

Our MS in epidemiology program is designed to equip students with the methodologies and skills needed to carry out research and manage public health programs: identify correlates of disease that may be targets of primary prevention, evaluate the consequences of changes in health care delivery on populations, and accommodate the growing need to integrate and analyze large-scale information.

The advanced certificate in analytic epidemiology is designed to provide individuals with the knowledge and tools to assess and understand the health-related information they encounter in their professional or personal lives.

Our productive and collaborative faculty have specific research interests in environmental, cardiovascular, maternal and child health, HIV, cancer, infectious disease, aging, nutritional, and injury and emergency care epidemiology. Faculty mentor students in these specific areas, but students are also encouraged to develop research projects of their own interests, working with faculty from around the medical center and university. Current and former students have trained and conducted research with faculty and clinicians from the Wilmot Cancer Center, Institute for Human Health and the Environment, Clinical and Translational Sciences Institute, Aab Cardiovascular Research Institute, and numerous individual clinical departments at the University. Our students regularly present posters and give podium presentations at major conferences and publish in peer-reviewed journals. Our alumni have gone on to positions in academia, federal and state government, and the private sector.

Mission Statement and Strategic Goals

The doctoral program prepares students for careers conducting independent community and population research focusing on the causes and prevention of disease. The program builds closely mentored relationships between students and faculty, and the collaborative atmosphere at the Medical Center enables students to work with researchers in various fields. Graduates will be well prepared to contribute their training, expertise, and insights to multidisciplinary investigations that span laboratory, clinical, and public health research.

The MS in epidemiology equips students with the knowledge and skills needed to examine factors linked to the development and prevention of disease in populations. We meet this goal by providing students with a strong foundation in the fundamental elements of epidemiologic research and biostatistics. Upon completion of the program, students understand and apply the methodologies and study designs used to examine factors in the development and prevention of disease; apply statistical tools to analyze data applicable to public health outcomes; take on positions in a wide variety of private and public institutions engaged in clinical and public health research and evaluation.

The advanced epidemiology certificate gives researchers and other interested individuals a practical understanding of quantitative research methods, including survey development, case control studies, cohort studies, randomized controlled trials, pragmatic trials, and quasi-experimental methods. Students will also learn about qualitative research methods, including ethnographic interviewing, participant observation, focus groups, and community-based participatory research.

PhD: https://www.urmc.rochester.edu/education/graduate/phd/epidemiology.aspx

MS: https://www.urmc.rochester.edu/education/graduate/masters-degrees/epidemiology.aspx

Advanced Certificate: https://www.urmc.rochester.edu/education/graduate/certificate/advanced-certificate-in-analytic-epidemiology.aspx

Graduate Faculty Information

Robert Block, MD, *Rutgers University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, Medicine

Diana Fernandez, PhD, *University of Minnesota*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Courtney Jones, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Emergency Medicine
Joint Appointment(s): Orthopaedics

Todd A. Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics

Yu Liu, PhD, *Vanderbilt University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Mostafa Mohamed, PhD, University of Rochester
Assistant Professor
Primary Appointment(s): Public Health Sciences

David Rich, ScD, *Harvard University*
Professor
Research Director, Division of Epidemiology; Director, Epidemiology PhD Program; Director, Epidemiology MS Program
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine, Environmental Medicine

Christopher Seplaki, PhD, *University of Wisconsin–Madison*
Associate Professor
Director, Master of Public Health Program
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Psychiatry

Edwin van Wijngaarden, PhD, *University of North Carolina at Chapel Hill*
Professor
Associate Chair, Public Health Sciences
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics, Dentistry, Community Health and Prevention

Annalynn M. Williams, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Surgery
Joint Appointment(s): Wilmot Cancer Center

Admission

Applying to Doctoral Programs

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

We expect all application materials to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

Candidates who are particularly suited to the program are health professionals, those already having master's degrees in epidemiology or public health, and individuals with degrees in related fields such as the natural sciences, sociology, psychology, social work, or demography.

Application Materials

To apply, create an online SOPHAS application account (SOPHAS application), and include a:

- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Three letters of recommendation
- Writing sample
- Applicants whose native language is not English, and whose previous master's degree was not done in the United States, must demonstrate English proficiency by providing official scores within two years of the original test date. Acceptable test types: official TOEFL (SMD school code: 2948; SOPHAS application code: 5688), IELTS, and DuoLingo scores.
- CV or resume (optional)
- Research papers, publications and other original works (optional)

Please do not include secondary school documentation or financial documentation as these are not used during the admissions process.

Application Timeline

- December 1 – Complete application due
- December to January – Interviews scheduled
- February – Interviews held at University of Rochester Medical Center
- February to March – Offer of admission notices mailed after interviews
- April 15 – Responses due for offer of admission
- August or September – Fall semester begins

Applying to Master's Programs

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

We expect all application materials (with the exception of official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

To apply, create an online SOPHAS application account (SOPHAS), including a:

- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Three letters of recommendation
- Writing sample
- Applicants whose native language is not English must demonstrate English proficiency by providing official scores within two years of the original test date. Acceptable test types: official TOEFL (SMD school code: 2948; SOPHAS application code: 5688), IELTS, and DuoLingo scores.
- CV or resume (optional)
- Research papers, publications and other original works (optional)

Application deadline is May 1 (for fall admission) .

Applying to Advanced Certificates

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required prior to matriculation in the form of an official transcript noting degree conferral. We expect all application materials (exception official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

Application deadlines are May 1 (fall admission) and November 1 (spring admission).

Required Application Materials

- Online application (not SOPHAS) should include:
- Statement of purpose
- Transcript(s)
- Official TOEFL (institution code: 2948) or IELTS score for applicants whose native language is not English
- CV or resume
- Research papers, publications and other original works (optional)

Academics

Advanced Certificates and Requirements

The advanced certificate program is a post-baccalaureate course of academic study designed for students and practitioners who seek to enhance their professional development. Certificates consist of four or five courses (12 to 15 credits). Up to 10 credits can be applied to a subsequent master's degree, if desired.

REQUIRED COURSES

PM 410. Introduction to Data Management and Analysis
PM 415. Principles of Epidemiology
PM 401. Quantitative Methods or **BST 463.** Introduction to Biostatistics
PM 416. Epidemiology Methods or **PM 464.** Introduction to Regression Analysis

Master's Degrees and Requirements

The MS in epidemiology includes 31 credits of required coursework. This comprises epidemiology (or biostatistics) core methods courses, ethics, elective courses, and thesis research (six credits). Students submit a written research proposal to their thesis committee for approval. They defend their thesis at completion in a public forum followed by a closed Q&A session with thesis committee members.

CORE REQUIREMENTS (25 CREDITS)

PM 401. Quantitative Methods in Public Health Research or **BST 463.** Introduction to Biostatistics
PM 410. Introduction to Data Management and Analysis Using SAS
PM 413. Field Methods in Epidemiology or BST 465. Design of Clinical Trials
PM 415. Principles of Epidemiology
PM 416. Epidemiology Methods
PM 469. Multivariable Models for Epidemiology or **PM 464.** Introduction to Regression Analysis
IND 501. Ethics and Professional Integrity in Research
PM 460. Master's Essay

Epidemiology Electives (select one)
PM 413. Field Methods in Epidemiology
PM 414. History of Epidemiology
PM 418. Cardiovascular Epidemiology
PM 424. Chronic Disease Epidemiology
PM 442. Nutritional Epidemiology
PM 451. Infectious Disease Epidemiology
PM 469. Multivariate Models for Epidemiology
PM 470. Environmental and Occupational Epidemiology
PM 489. Injury Epidemiology and Emergency Care Research Methods
PM 510. Causal Inference in Epidemiology

General Electives (select one below or an Epidemiology Elective or another course with Program Director approval)
PM 412. Survey Research
PM 419. Recruitment and Retention of Human Subjects in Clinical Research
PM 426. Social and Behavioral Medicine
PM 445. Introduction to Health Services Research
PM 485. Introduction to Biomedical Informatics
BST 465. Design of Clinical Trials

Doctoral Degrees and Requirements

In general, the requirements for the PhD degree follow the University of Rochester policies and procedures. The curriculum requires a minimum of 61 credits of formal coursework and 61 credits of dissertation research. This doctoral program has been designed to provide advanced training in epidemiologic principles and quantitative skills. The expected coursework also provides preparation in general epidemiologic topics with a number of electives in a concentration of interest within epidemiology, such as cardiovascular disease epidemiology, environmental and occupational epidemiology, cancer epidemiology, , injury and emergency care epidemiology, nutritional epidemiology, infectious disease epidemiology, chronic disease epidemiology, and special populations, such as pregnant women, children, the elderly, and minorities. Specific course requirements and a sample layout are provided below.

CORE REQUIREMENTS

PM 410. Intro to Data Management and Data Analysis Using SAS
PM 412. Survey Research
PM 413. Field Epidemiology
PM 414. History of Epidemiology
PM 415. Principles of Epidemiology
PM 416. Epidemiological Methods
PM 426. Social and Behavioral Medicine
PM 469. Multivariate Models for Epidemiology
PM 510. Causal Inference in Epidemiology
PM 472. Measure and Evaluation of Research Instruments
PM 438. Grantsmanship
BST 463. Introduction to Biostatistics
PM 464. Introduction to Regression Analysis
BST 465. Design of Clinical Trials
IND 503. or **IND 501.** Ethics

Epidemiology Electives (select three)

PM 418. Cardiovascular Epidemiology
PM 424. Chronic Disease Epidemiology
PM 442. Nutritional Epidemiology
PM 451. Infectious Disease Epidemiology
PM 460. Cancer Epidemiology
PM 470. Environmental and Occupational Epidemiology
PM 489. Injury Epidemiology and Emergency Care Research Methods

General Electives (select three)

PM 410. Introduction to Data Management and Data Analysis Using SAS
PM 412. Survey Research
PM 413. Field Epidemiology
PM 414. History of Epidemiology
PM 415. Principles of Epidemiology
PM 416. Epidemiological Methods
PM 418. Cardiovascular Epidemiology
PM 419. Recruitment and Retention of Human Subjects in Clinical Research
PM 424. Chronic Disease Epidemiology
PM 426. Social and Behavioral Medicine
PM 442. Nutritional Epidemiology
PM 445. Introduction to Health Services Research
PM 451. Infectious Disease Epidemiology
PM 460. Cancer Epidemiology
PM 469. Multivariate Models for Epidemiology
PM 510. Causal Inference in Epidemiology
PM 472. Measure and Evaluation of Research Instruments
PM 438. Grantsmanship
PM 464. Introduction to Regression Analysis
PM 470. Environmental and Occupational Epidemiology
PM 485. Introduction to Biomedical Informatics
PM 489. Injury Epidemiology and Emergency Care Research Methods
BST 463. Introduction to Biostatistics
BST 465. Design of Clinical Trials
IND 503 or **IND 501.** Ethics

Experimental Therapeutics

Edwin van Wijngaarden
Program Director

Overview

The Advanced Certificate in Experimental Therapeutics is designed to give individuals the knowledge and tools needed to conduct clinical research trials.

Mission Statement and Strategic Goals

The program's mission is provide researchers and other interested individuals with a practical understanding of quantitative research methods, including case control studies, cohort studies, and randomized clinical trials.

https://www.urmc.rochester.edu/education/graduate/certificate/advanced-certificate-in-experimental-therapeutics.aspx

Graduate Faculty Information

Paula Amina Alio, PhD, *University of Southern Florida*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, School of Nursing

Robert Charles Block, MD, *New Jersey Medical School*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, Medicine–Cardiology

Shubing Cai, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Public Health Sciences

Erin Campbell, MD, *University at Buffalo*
Assistant Professor of Clinical Public Health Sciences
Primary Appointment(s): Public Health Sciences

Francisco Cartujano Barrera, PhD, *Seton Hall University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Cancer Center, Center for Community Health and Prevention

Ann M. Dozier, PhD, *University of Rochester*
Professor
Albert David Kaiser Chair of Public Health and Preventive Medicine
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Isabel D. Fernandez, PhD, *University of Minnesota*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Theresa Marie Green, PhD, *Western Michigan University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Nursing (SON), Center for Community Health and Prevention

Wyatte C. Hall, PhD, *Gallaudet University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Neurology, Obstetrics and Gynecology, Pediatrics, Center for Community Health and Prevention

Elaine L. Hill, PhD, *Cornell University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Economics (AS&E), Obstetrics and Gynecology

Todd A. Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Environmental Medicine

Yue Li, PhD, *University of Rochester*
Professor
Primary Appointment(s): Public Health Sciences

Yu Liu, PhD, *Vanderbilt University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Camille A. Martina, PhD, *University of Rochester*
Research Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine

Scott McIntosh, PhD, *University of Miami*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Cancer Center, Center for Community Health and Prevention, Dentistry, Orthopaedics

Mostafa Mohamed, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences

Reza Yousefi Nooraie, PhD, *McMaster University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Deborah J. Ossip, PhD, *University of Pittsburgh*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Jose G. Perez-Ramos, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Obstetrics and Gynecology, Center for Community Health and Prevention

David Rich, ScD, *Harvard University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine, Environmental Medicine

Christopher Seplaki, PhD, *University of Wisconsin–Madison*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Psychiatry

James Tacci, MD, *University of Rochester;* JD, *Syracuse University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Center of Nursing Entrepreneurship

Kelly N. Thevenet-Morrison, MS, *Rutgers University*
Lead Programmer Analyst
Primary Appointment(s): Public Health Sciences

Edith Williams, PhD, *University at Buffalo*
Professor
Dean's Associate Professorship
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine; Allergy, Immunology and Rheumatology; Center for Community Health and Prevention; Clinical and Translational Research

Edwin van Wijngaarden, PhD, *University of North Carolina at Chapel Hill*
Professor
Associate Chair, Public Health Sciences
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics, Dentistry, Community Health and Prevention

Admissions

Applying to Advanced Certificates

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Application Requirements

We expect that all application materials (with the exception of official score reports) be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

- Online application (recommended browser: Google Chrome)
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Official TOEFL (institution code: 2948) or IELTS score (if native language is not English)
- CV or resume
- Research papers, publications, and other original works for consideration (not required)

Please do not include secondary school documentation or financial documentation as these are not used during the admissions process. Application deadlines are May 1 for the fall semester and November 1 for the spring semester.

Academics

Advanced Certificates and Requirements

The advanced certificate program is a post-baccalaureate course of academic study designed for students and practitioners who seek to enhance their professional development. Certificates consist of four or five courses for a total of 12 to 15 credits.

GRADUATE COURSE TITLES

PM 401. Quantitative Methods or BST 463. Introduction to Biostatistics
PM 488. Experimental Therapeutics
BST 465. Design of Clinical Trials
IND 501. Ethics
PM 410. Introduction to Data Management and Analysis
PM 415. Principles of Epidemiology
PM 419. Recruitment and Retention of Human Subjects
PM 438. Grantsmanship
PM 472. Measurement and Evaluation of Research Instruments
PM 484. Medical Decisions and Cost-Effective Research
PM 487. Fundamentals of Science, Technology, and Health Policy

Genetics

Douglas Portman
Program Director

Hartmut Land
Chair, Department of Biomedical Genetics

Overview

The graduate program in genetics offers doctoral training in genetics with emphasis on molecular and cellular biology, developmental biology, and computational biology. The program takes a broad view of genetics, a discipline that unites diverse areas of the modern biomedical sciences. This perspective offers students a wide variety of interdisciplinary and collaborative opportunities in fundamental biomedical research, disease models, and translational research. While the program is based in the Department of Biomedical Genetics, it also includes affiliated faculty from many other departments and centers in the Medical Center and Arts, Sciences and Engineering.

Training in the first year of the program comprises introductory graduate-level classes in in the biomedical sciences along with an advanced course in genetics. These classes lay the foundation for a variety of advanced courses and electives on specialized topics, such as developmental biology and cancer biology. Three laboratory rotations are a major component of the first year. During these rotations, graduate students perform research projects in program faculty laboratories. Students gain experience in independent research and an in-depth view of the scope of faculty research, choosing one of the labs in which to carry out their thesis research.

Training in the second and the following years includes carrying out thesis research as well as in-depth specialized elective courses and participation and presentation in departmental and laboratory seminars and journal clubs. Depending on their interests, students can take either Concentrations in either Cancer Biology or Bioinformatics. Students also serve as teaching assistants for at least one semester and learn about issues of science ethics. A weekly seminar series provides a venue to present research, receive feedback, and learn about the wide variety of research in the program. Graduate student research projects are supported and monitored by the student's mentor and a thesis committee that consists of four faculty members. By the beginning of the third year, students complete a qualifying exam that allows them to enter candidacy for the doctorate.

Mission Statement

The PhD program in genetics strives to provide students with world-class, research-oriented training in modern genetics and genomics in a collaborative and supportive environment in which all can achieve their full potential. The program takes a broad view of genetics, a field that unites disparate areas of modern biomedical research, allowing opportunities for collaboration and creative research at interdisciplinary boundaries. Research in the program encompasses a wide variety of experimental systems and models, focusing on the mechanisms of fundamental biological processes and their disruption in human disease. The program deeply values and actively fosters diversity and inclusion, critical thinking, rigorous discourse, interdisciplinary interaction and collaboration, and an appreciation of the potential of science as a positive force in society. The program also emphasizes mentoring, professional development, and preparing students for success in multiple career paths. Successful completion of the graduate program culminates in the PhD degree in genetics.

https://www.urmc.rochester.edu/education/graduate/phd/biomedical-genetics-and-genomics.aspx

Graduate Faculty Information

Brian J. Altman, PhD, *Duke University*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Douglas M. Anderson, PhD, *Arizona State University*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology

Jeevisha Bajaj, PhD, *National Centre for Biological Sciences, TIFR*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Bradford C. Berk, MD, PhD, *University of Rochester*
Professor
Distinguished University Professor
Primary Appointment(s): Medicine–Cardiology
Joint Appointment(s): Neurology, Pharmacology and Physiology

Xin Bi, PhD, *Johns Hopkins University*
Professor
Primary Appointment(s): Biology

Benoit Biteau, PhD, *Université Versailles*
Associate Professor
Primary Appointment(s): Biomedical Genetics

Paul L. Boutz, PhD, *University of California, Los Angeles*
Assistant Professor
Primary Appointment(s): Biochemistry and Biophysics

Michael D. Bulger, PhD, *California, San Diego*
Associate Professor
Primary Appointment(s): Pediatrics, Center for Pediatric Biomedical Research

Stephen Dewhurst, PhD, *University of Nebraska, Omaha*
Professor
Albert and Phyllis Ritterson Professorship; Associate Vice President for Health Sciences Research; Vice Dean for Research
Primary Appointment(s): Microbiology and Immunology

Thomas Diekwisch, PhD, *The Philipp University of Marburg*
Professor
Chair, Center for Oral and Craniofacial Sciences; Margaret and Cy Welcher Professorship in Dental Research, Center for Oral and Craniofacial Sciences
Primary Appointment(s): Department of Dentistry

Mark E. Dumont, PhD, *Johns Hopkins University*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Dmitri N. Ermolenko, PhD, *Pennsylvania State University*
Professor
Primary Appointment(s): Biochemistry and Biophysics

Dragony Fu, PhD, *University of California, Berkeley*
Professor
Director of Graduate Affairs and Admissions, Biology
Primary Appointment(s): Biology

Karl Glastad, PhD, *Georgia Institute of Technology*
Assistant Professor
Primary Appointment(s): Biology

Steven A. Goldman,MD, *Weill Medical College of Cornell University;* PhD, *Rockefeller University*
Professor
URMC Distinguished Professor in Neurosciences; Dean Zutes Chair in Biology of the Aging Brain; Co-Director, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Vera Gorbunova, PhD, *Weizmann Institute of Science, Israel*
Professor
Codirector, Rochester Aging Research Center
Primary Appointment(s): Biology

Isaac S. Harris, PhD, *University of Toronto*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Biochemistry and Biophysics

Jeffrey J. Hayes, PhD, *Johns Hopkins University*
Professor
Chair, Biochemistry and Biophysics; Shohei Koide Professor in Biochemistry and Biophysics
Primary Appointment(s): Biochemistry and Biophysics

Aram F. Hezel, MD, *University at Buffalo*
Professor
John and Ethel Heselden Professorship
Primary Appointment(s): Medicine–Hematology/Oncology
Joint Appointment(s): Biomedical Genetics

Amy Kiernan, PhD, *Boston College*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics

Hartmut K. Land, PhD, *University of Heidelberg*
Professor
Chair, Biomedical Genetics; Robert and Dorothy Markin Professorship
Primary Appointment(s): Biomedical Genetics

Amanda Larracuente, PhD, *Cornell University*
Professor
Nathaniel and Helen Wisch Professor of Biology
Primary Appointment(s): Biology

Richard T. Libby, PhD, *Boston College*
Professor
Senior Associate Dean, Graduate Education and Postdoctoral Affairs
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Pathology and Laboratory Medicine, Biomedical Genetics, Center for Visual Science

Hongbo Liu, PhD, *Harbin Institute of Technology*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Alayna E. Loiselle, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Orthopaedics, Center for Musculoskeletal Research
Joint Appointment(s): Biomedical Engineering, Pathology and Laboratory Medicine

Lynne Maquat, PhD, *University of Rochester*
Professor
Director, Center for RNA Biology; J. Lowell Orbison Distinguished Service Alumni Professorship
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Pediatrics

Thomas J. Mariani, PhD, *Rutgers University*
Professor
David H. Smith Professor in Pediatrics
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Environmental Medicine, Biomedical Genetics

David H. Mathews, MD, *PhD, University of Rochester*
Professor
Lynne E. Maquat Distinguished Professor
Primary Appointment(s): Biochemistry and Biophysics

Margot Mayer-Pröschel, PhD, *University of Würzburg*
Professor
Martha M. Freeman, MD Professorship in Biomedical Genetics
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Matthew N. McCall, PhD, *Johns Hopkins University*
Associate Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Biomedical Engineering

Helene McMurray, PhD, *University of Rochester*
Associate Professor
Director, PhD Program in Pathology–Cell Biology of Disease
Primary Appointment(s): Pathology and Laboratory Medicine

Stephano Mello, PhD, *Universidade de São Paulo*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Edward Messing, MD, *New York University*
Professor
Primary Appointment(s): Urology

Patrick J. Murphy, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Biology

Keith W. Nehrke, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine–Nephrology
Joint Appointment(s): Pharmacology and Physiology

Anne Nichols, PhD, *Virginia Tech*
Assistant Professor
Primary Appointment(s): Orthopaedics

Mark D. Noble, PhD, *Stanford University*
Professor
Martha M. Freeman, MD Professorship in Biomedical Genetics
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Mitchell R. O'Connell, PhD, *University of Sydney*
Associate Professor
Dean's Associate Professorship
Primary Appointment(s): Biochemistry and Biophysics

Michael A. O'Reilly, PhD, *University of Cincinnati*
Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Environmental Medicine

Alexander R. Paciorkowski, MD, *University of Connecticut*
Associate Professor
Primary Appointment(s): Neurology–Child Neurology
Joint Appointment(s): Biomedical Genetics, Neuroscience, Pediatrics

James Palis, MD, *University of Rochester*
Professor
Northumberland Trust Professorship in Pediatrics
Primary Appointment(s): Pediatrics
Joint Appointment(s): Pathology and Laboratory Medicine

Archibald S. Perkins, MD, PhD, *Columbia University*
Professor
Primary Appointment(s): Pathology and Laboratory Medicine

Douglas S. Portman, PhD, *University of Pennsylvania*
Professor
Director, PhD Program in Biomedical Genetics and Genomics; Donald M. Foster, MD Professorship in Biomedical Genetics
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Biology, Neuroscience

Christoph Pröschel, PhD, *Oxford University*
Associate Professor
Primary Appointment(s): Biomedical Genetics

Jacques Robert, PhD, *Rockefeller University*
Professor
Chair, Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Environmental Medicine

Marlies Rossmann, MD, *Humboldt University;* PhD, *Stony Brook University*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Microbiology and Immunology

Regina K. Rowe, MD, *St. Louis University;* PhD, *Washington University*
Assistant Professor
Primary Appointment(s): Pediatrics–Infectious Diseases

Edward M. Schwarz, PhD, *Albert Einstein College*
Professor
Richard and Margaret Burton Distinguished Professor in Orthopaedics; Director, Center for Musculoskeletal Research
Primary Appointment(s): Orthopaedics
Joint Appointment(s): Urology, Pathology and Laboratory Medicine, Biomedical Engineering, Microbiology and Immunology

Ruchira Singh, PhD, *Kansas State University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics

Eric M. Small, PhD, *University of Texas at Austin*
Professor
Primary Appointment(s): Medicine, Aab Cardiovascular Research Institute
Joint Appointment(s): Biomedical Engineering, Pharmacology and Physiology

Marissa Sobolewski-Terry, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Environmental Medicine

Laurie A. Steiner, MD, *Mount Sinai School of Medicine*
Professor
Lindsey Distinguished Professorship for Pediatric Research
Primary Appointment(s): Pediatrics–Neonatology

Gabriella Sterne, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience, Biology

Martha Susiarjo, PhD, *Case Western Reserve University*
Professor
Primary Appointment(s): Environmental Medicine

Michel Telias, PhD, *Tel Aviv University*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience, Center for Visual Science

Juilee Thakar, PhD, *Würzburg University*
Associate Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Biostatistics and Computational Biology, Biomedical Genetics

Charles A. Thornton, MD, *University of Iowa*
Professor
Saunders Family Distinguished Professor in Neuromuscular Research
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Paula M. Vertino, PhD, *University at Buffalo*
Professor
Wilmot Distinguished Professorship in Cancer Genomics; Senior Associate Dean, Basic Research
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pathology and Laboratory Medicine

Ning Wang, PhD, *Ohio State University*
Assistant Professor
Primary Appointment(s): Biology

Michael Welte, PhD, *University of Chicago*
Professor
Primary Appointment(s): Biology

John Werren, PhD, *University of Utah*
Professor
Nathaniel and Helen Wisch Professor of Biology
Primary Appointment(s): Biology

Andrew P. Wojtovich,PhD, *University of Rochester School of Medicine & Dentistry*
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Peng Yao, PhD, *Chinese Academy of Sciences*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Biochemistry and Biophysics

Admissions

Applying to Doctoral Programs

The genetics admissions committee takes an integrative, holistic approach to assessing a candidate's qualifications and goals. No one factor has a "make-or-break" influence on the committee's assessments; rather, the committee individually evaluates each candidate's background, opportunities, and achievements with an eye toward assessing their potential for success in graduate school and the degree to which enrollment in our program will benefit them. Transcripts of all post-secondary education (associate's, bachelor's, and/or master's degrees, or their equivalents) are required and allow the assessment of the candidate's academic record. A minimum of three letters of reference, ideally from referees who can provide informed, detailed, honest assessments of the candidate's potential for success in a research-intensive Ph.D. program, are required. A required personal statement allows the candidate a free-form opportunity to describe their background and explain the motivations for their interest in our program.

The Graduate Record Examination (GRE) or equivalent is not required; not submitting GRE scores will not disadvantage a candidate's application. However, test scores may be submitted voluntarily, in which case they will be integrated into the committee's holistic assessment of the application.

For students whose primary language is not English, the Test of English as a Foreign Language (TOEFL), the International English Language Testing System (IELTS), or the Duolingo English Test (DET) is a requirement, unless applicants have successfully completed secondary instruction at an English-language institution.

Academics

Master's Degrees and Requirements

The BGG program awards a master of science in genetics degree *en passant* to students upon successful completion of their qualifying exam, which must be taken by the second month of their third year. The program does not offer a terminal master's degree.

Doctoral Degrees and Requirement

The program awards the PhD in genetics. The curriculum has several key requirements: core courses, seminars, elective courses, and experimental and/or computational research. In this context, research is the most important aspect of the BGG program. As such, the PhD degree is awarded only after a student has conducted an independent research project and successfully written and defended a dissertation that demonstrates a high level of research aptitude, intellectual competence, and original thought. Students are typically expected to publish their thesis work in peer-reviewed journals by the time of their defense.

Additional important parts of the PhD training include teaching assistantships, professional development activities guided by an individual development plan (IDP), and training in science communication and outreach. Students may also be subject to the requirements of the sponsoring advisor's academic department. Students in the BGG program may optionally choose to enroll in concentrations in cancer biology and in bioinformatics, each of which has an associated set of required coursework and seminar participation. Students may fulfill concentration requirements at any time during their PhD studies.

GRADUATE COURSE TITLES

ANA 513. Neuroinflammation
BCH 412. Advanced Topics in Biological Macromolecules
BCH 521. Bioinformatics for Life Scientists
BIO 457. Applied Genomics
BIO 414. Biostatistics
BIO 426. Developmental Biology
BIO 443. Eukaryotic Gene Regulation
BST 432. High Dimensional Data Analysis
BST 434. Genomic Data Analysis
BST 467. Applied Statistics in the Biomedical Sciences
DSC 462. Computational Introduction to Statistics
GEN 503. Genetics Seminar (Fall)
GEN 504. Genetics Seminar (Spring)
GEN 506. Principles in Stem Cell Biology
GEN 507. Advanced Genetics and Genomics
GEN 508. Development, Homeostasis, and Aging: Biological Systems from Conception to Decline
GEN 595. PhD Research
IND 419. Introduction to Quantitative Biology
IND 426. Science Communication
IND 431. Foundations in Modern Biology I
IND 432. Foundations in Modern Biology II
IND 439. Leadership and Management for Scientists
IND 484. Current Topics in Bioinformatics
IND 501. Ethics and Professional Integrity in Research
IND 507. Cancer Biology Seminar
IND 517. Clinical and Translational Oncology
MBI 414. Microbial Pathogenesis
MBI 421. Microbial Genetics and Physiology
MBI 456. Virology
MBI 473. Immunology
MBI 515. Advanced Immunology
NSC 512. Cellular Neuroscience
NSC 525. Biology of Neurological Disease
PHP 404. Principles of Pharmacology
PHP 447. Signal Transduction
PTH 507. Molecular and Cellular Biology of Cancer
TOX 521. Biochemical Toxicology
TOX 522. Organ Systems Toxicology

Genetic Counseling

Audrey Schroeder
Program Director
Emily Calamaro
Associate Program Director
Kimberly Fluet
Director of Research

Overview

The Master of Science in Genetic Counseling (MSGC) is a full-time program that prepares students for careers as genetic counselors.

Genetic counselors are essential players in the health care team. They possess the unique skills and knowledge necessary to support individuals and families in understanding and adapting to the medical and psychological implications of genetic conditions. The genetic counseling training program in the University of Rochester School of Medicine and Dentistry prepares students for a range of career opportunities available to genetic counselors.

The program is 21 months (five semesters) and is accredited by the Accreditation Council for Genetic Counseling (ACGC).

Mission Statement and Strategic Goals

Our mission is to provide graduate students with the foundation of knowledge and skills critical for successful practice as genetic counselors in varied and emerging genetic counseling roles. The program is dedicated to providing a supportive and rigorous learning environment where students thrive and engage in comprehensive clinical training that includes both common and specialized areas of genetic counseling practice. Our program emphasizes leadership development with a collaborative, interdisciplinary approach that prepares students to advance genetic and genomic health care for people of widely diverse backgrounds.

Program Objectives

The program requires genetic counseling graduate students to:

- Achieve a wide range of critical genetic counseling skills and competencies through completion of program components, including didactic courses, clinical and fieldwork training, thesis research projects, and supplemental learning experiences
- Demonstrate readiness for immediate integration into the genetic counseling profession
- Engage in robust clinical training experiences that include both common areas of genetic counseling practice (pediatric, cancer, and prenatal genetics) as well as more specialized areas (such as ocular genetics, neurogenetics, and cardiogenetics)
- Build strong professional relationships with peers and faculty that exemplify a collaborative, interdisciplinary approach to patient care, research, and advocacy
- Develop effective leadership strategies and appreciate the vast leadership opportunities and needs within the genetic counseling field, including those aimed at building diversity, equity, and inclusion within genetic counseling graduate programs, the genetic counseling profession, research, and health care
- Develop research skills in designing and conducting a research study, which involves formulation of research question(s), data collection, data analysis, and oral and written presentation of findings
- Engage in ethical professional conduct, consistent with the National Society of Genetic Counselors (NSGC) Code of Ethics, with respect to themselves, peers, faculty, patients, and society.

https://www.urmc.rochester.edu/education/graduate/masters-degrees/genetic-counseling.aspx

Graduate Faculty Information

Audrey Schroeder, MS, CGC, MS, *Icahn School of Medicine at Mount Sinai*
Senior Associate
MSGC Program Director
Primary Appointment(s): Pediatrics

Emily Calamaro, MGC, CGC, *University of Maryland*
Senior Associate
MSGC Associate Program Director
Primary Appointment(s): Pediatrics

Lindsay Adamczak, MS, CGC, MS, *Brandeis University*
Senior Associate
Primary Appointment(s): Pediatrics

Diana Bailey, MS, CGC, MS, *Case Western Reserve University*
Senior Associate
Primary Appointment(s): Pediatrics
Joint Appointment(s): Obstetrics and Gynecology

David Ross Bearden, MD, *University of Rochester;*
MSCE, *University of Pennsylvania*
Associate Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Pediatrics

Kwasi Boaitey, LCSW, PCC, PhD, *University of Rochester*
Senior Associate
Lead, Culturally Responsive Management (University of Rochester & University of Rochester Medical Center); Assistant Director, Health & Incarceration Pathway (UR School of Medicine & Dentistry); Core Investigator (URMC Office of Health Equity)
Primary Appointment(s): Health Humanities and Bioethics

Jordan Bontrager, CGC, MS, *University of Wisconsin*
Associate
Primary Appointment(s): Neurology

Jenina Capasso, CGC, MS, *Arcadia University*
Senior Associate
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Pediatrics

Kimberly Fluet, PhD, *Cornell University*
Senior Instructor
MSGC Director of Research
Primary Appointment(s): Warner School of Education
Joint Appointment(s): Pediatrics

Chin-To Fong, MD, *Harvard University*
Professor
Primary Appointment(s): Pediatrics
Joint Appointment(s): Health Humanities and Bioethics, Medicine, Biochemistry and Biophysics

Mystimarie Geiger, CGC, MS, *Long Island University (LIU) Post*
Assistant
Primary Appointment(s): Medicine

Rebecca Heilman, *CGC, MS, Long Island University (LIU) Post*
Assistant
Primary Appointment(s): Medicine

Alex V. Levin, MHSc, MD, *Jefferson Medical College;* MHSc, *University of Toronto*
Professor
Adeline Lutz–Steven S. T. Ching, MD Distinguished Professorship in Ophthalmology;
Chief, Pediatric Ophthalmology and Ocular Genetics, Flaum Eye Institute; Chief, Clinical Genetics, Golisano Children's Hospital and URMC
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Pediatrics

Susan McDaniel, PhD, *University of North Carolina at Chapel Hill*
Professor
Dr. Laurie Sands Distinguished Professor of Families and Health; Director, Institute for the Family; Vice Chair, Family Medicine
Primary Appointment(s): Psychiatry
Joint Appointment(s): Family Medicine

Kelly Minks, CGC, MS, *University of North Carolina at Greensboro*
Senior Associate
Primary Appointment(s): Neurology

Jenny Speice, PhD, *Virginia Tech*
Associate Professor (part-time)
Director, MS Marriage and Family Therapy Program; Co-Director: Family Therapy Training Program
Primary Appointment(s): Psychiatry

Eran Tallis, MD, *Hadassah Medical School*
Assistant Professor
Primary Appointment(s): Pediatrics
Joint Appointment(s): Medicine

Celeste Wyman, CGC, ScM, *Johns Hopkins University*
Senior Associate
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Pediatrics

Admissions

Applying to Master's Programs

MSGC program applicants must submit their applications online directly to the University of Rochester School of Medicine and Dentistry through Application Management. MSGC program applicants are also required to separately register with the Genetic Counseling Admissions Match through National Matching Services (NMS): GC Admissions Match. NMS provides each applicant with a unique code number for the upcoming match. The Admissions Match enhances the placement of applicants into positions in master's-level genetic counseling programs that are accredited by the Accreditation Council for Genetic Counseling (ACGC).

Application deadlines and other important dates are available on the MSGC program website.

Application requirements include:

- Baccalaureate degree, or its equivalent, from an accredited institution
- Prerequisite courses, including a minimum of one semester/quarter each of: biochemistry, biology, genetics, organic chemistry, psychology, and statistics
- Transcript (For applicants who have earned a degree from a non-U.S. institution, an independent course-by-course credential evaluation from a NACES-approved evaluator is also required. If a bachelor's degree is from a non-US institution, the credential evaluation must document equivalency of a U.S. baccalaureate degree or higher.)
- GPA of 3.0 or above (strongly recommended)
- Statement of purpose
- Three letters of recommendation (the program does not accept references submitted via Interfolio)
- Resume or CV
- Exposure to genetic counseling profession
- Applicants whose native language is not English must demonstrate English proficiency. Official scores must be within two years of the original test date.
- Personal interview (held virtually)

Academics

Master's Degrees and Requirements

MSGC program components include didactic courses, clinical/fieldwork training, thesis research projects, and supplemental learning experiences. As students progress through the program, they develop and demonstrate achievement of a wide range of critical genetic counseling skills and competencies. Student achievement of the Accreditation Council for Genetic Counseling (ACGC) practice-based competencies (PBCs) are evaluated throughout the program.

Students must successfully complete all of the following for the master's degree to be granted:

- All required didactic courses (42 credits)
- Five clinical/fieldwork rotations (15 credits)
- An acceptable master's research project (6 credits)
- Participation in required supplemental learning activities

GRADUATE COURSE TITLES

GNC 420. Foundations in Medical Genetics
GNC 403. Embryology and Reproductive Genetics
GNC 430. Foundations of Genetic Counseling
GNC 410. Genetics Bioethics
Genetic Counseling Research: Data Collection and Analysis Methodologies
GNC 520. Molecules to Cells (MTC)
GNC 497. Genetic Counseling in Clinical Practice
GNC 447. Client-Centered Genetic Counseling
GNC 465. Medical Genetics by Subspecialty
GNC 491-493. Master's Thesis I-III
GNC 501-505. Clinical Rotation/Fieldwork I-V
GNC 467. Professional Issues in Genetic Counseling
GNC 494. Special Topics in Clinical Genetics
NSG 429. Diversity and Equity in Health Care
GNC 511. Genetic Counseling Case Seminar I
GNC 512. Genetic Counseling Case Seminar II
GNC 500. Biopsychosocial Family Experiences with Genetic Conditions

Health Humanities & Bioethics

Lainie Ross
Chair

Patricia Luck
Program Director

Overview

This one-year program provides advanced education, skills training and applied knowledge in the biopsychosocial approach to understanding health and illness using the tools and methods of the health humanities and bioethics. Increasingly complex health care environments require that the practitioner is able to attend to the biomedical domains of the patient's disease, understand and empathize with the patient's lived experience of illness, and be able to identify, analyze, and discuss the ethical considerations and/or conflicts that arise in the context of health care decision-making. Students have an opportunity to create their own program of study; engage with students from a wide range of disciplines, careers, and experiences; and develop a close working relationship with interdisciplinary faculty and mentors. The faculty are clinicians in medicine, nursing, and other health care fields, ethicists and scholars in the humanities and bioethics.

For students from health care disciplines, this program will strengthen and deepen knowledge, skills, and behaviors that can be applied to their own clinical practice and developed throughout their careers. Learners in the program will be able to serve as educators; they will have the foundational training to educate their colleagues and, as their careers progress, their students.

For students from humanities and other non-health care disciplines, this program extends their scholarly focus to the study of health care issues and practice. Students will learn about health care through formal coursework and from classmates who are training or practicing in diverse health care fields. The coursework and mixed interdisciplinary peer learning and clinical practicum provides students with personal and professional knowledge of some aspects of clinical care that will be valuable for careers in medical education or health care.

For all students at various career stages, the program offers an interdisciplinary, interprofessional learning environment that brings together learners from humanities, bioethics, and health care to share knowledge and expertise, to think critically and collaboratively about issues in health care, and to create networking opportunities and future collaborations.

Mission Statement and Strategic Goals

The Health Humanities and Bioethics Department integrates perspectives from humanities, arts, and ethics to understand person-centered relationships and social, cultural, and moral contexts in health care. Through our interprofessional and interdisciplinary collaborations across the University of Rochester Medical Center, we work to improve the well-being of our

patients, clinicians, and communities in a humanistic, ethical, and inclusive culture.

Program Goals

The MS in Health Humanities & Bioethics degree program provides advanced training and practice in the biopsychosocial approach to understanding health and illness. Through the study and application of humanities to issues in patient care, students will:

- Acquire knowledge of concepts, methods, and subject materials from core humanities disciplines (literature, philosophy, history, and visual arts) in relation to current problems and issues in health care
- Consider multiple perspectives from humanities and bioethics disciplines on "caring for the patient", with particular focus on the patient and clinician as persons in social and cultural contexts that shape their knowledge, behaviors, and attitudes
- Develop and apply skills with materials from the humanities and bioethics that reflect the biopsychosocial approach to health and healthcare with attention to the social, economic, cultural and environmental circumstances which patients and clinicians engage.
- Be able to choose a concentration focus with electives in either Medicine, History & Culture or Clinical & Translational Ethics that will complement their Capstone Project.

https://www.urmc.rochester.edu/education/graduate/masters-degrees/medical-humanities.aspx

Graduate Faculty Information

Susan Daiss, MDiv, *Colgate Rochester Crozer Divinity School*
Senior Associate Professor
Primary Appointment(s): Health Humanities and Bioethics
Joint Appointment(s): Memorial Art Gallery

Richard Dees, PhD, *University of Michigan*
Professor
Primary Appointment(s): Philosophy
Joint Appointment(s): Health Humanities and Bioethics

Erik Larsen, PhD, *University of Notre Dame*
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics

Patricia Luck, MBChB(MD), *University of Cape Town*
Assistant Professor
Program Director
Primary Appointment(s): Health Humanities and Bioethics

Nicholas Mercado, DrPH, *New York Medical College*
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics

Christopher Mooney, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Medicine
Joint Appointment(s): Health Humanities and Bioethics

Alexander Parry, PhD, *John's Hopkins University*
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics

Bryanna Moore, Ph.D., *Monash University*
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics

Natercia Rodrigues, MD, *University of Connecticut*
Assistant Professor
Primary Appointment(s): Family Medicine
Joint Appointment(s): Health Humanities and Bioethics

Lainie Ross, Ph.D., *Yale University*
Professor
Department Chair
Primary Appointment(s): Health Humanities and Bioethics

Marjorie Shaw, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Health Humanities and Bioethics

Christine Slobogin, PhD, *University of London*
Assistant Professor
Primary Appointment(s): Health Humanities and Bioethics

Admissions

Applying to Doctoral Programs

The Master of Science in Health Humanities & Bioethics program is intended for students, trainees and professionals in healthcare disciplines and those intending on entering a healthcare field (medicine, nursing, dentistry, social work, allied healthcare, and pastoral care), in allied health sciences (occupational therapy, physical therapy, physician assistants) and graduate students and scholars in humanities, social science, and science disciplines and fields (literature, history, visual arts, anthropology, gender, cultural and religious studies etc.) who seek to integrate aspects of medicine and patient care into their academic work and teaching. Candidates for admission to the program must have earned a baccalaureate degree, or its equivalent.

Applicants must submit the following:

- Online application
- Personal statement
- Writing sample
- Additional materials (optional)
- Transcripts from all previous college and graduate programs
- English proficiency documents (for applicants whose native language is not English)
- Three letters of recommendation
- $60 application fee

Academics

Master's Degrees and Requirements

The program requires 30 credit hours of graduate level work. Students must take all required courses, including a capstone practicum, and complete four elective courses. Completing a concentration is optional. The program can be full-time or part-time over two, three, or four semesters. Some students take one course per semester, completing the program in four to five years.

GRADUATE COURSE TITLES

MHB 401. Data Ethics in Healthcare
MHB 410. Clinical Bioethics
MHB 420. Stories in Health Care
MHB 421. History of Modern Medicine, 18th Century to Present
MHB 430. Visual Cultures of Health & Medicine
MHB 431. Clinical & Translational Research Ethics
MHB 440. History of the Body in Science and Medicine
MHB 450. Master's Research Methods: Capstone Planning
MHB 472. Philosophical Foundations of Bioethics
MHB 473. Unsafe America: Accidents, Disasters, and Society, 1800-2020
MHB 480. The Disabled Body in Modern Medicine and Culture
MHB 497. Capstone Practicum

Health Services Research and Policy

Ann Dozier
Chair

Edwin van Wijngaarden
Associate Chair and Director

Yue Li
Director, Health Services Research and Policy PhD and MS Programs

Overview

Health services research is a multidisciplinary field of scientific investigation that studies how social factors, financing systems, organizational structures and processes, health technologies, and personal behaviors affect access to health care, the quality and cost of health care, and ultimately our health and well-being. Health services research aims to provide a timely, reliable, and continuously improved evidence base to guide health care decisions made by clinicians, patients and families, executives and agencies, policymakers, and payers or purchasers.

Students in our program are offered a unique education at the forefront of health policy; health outcomes assessment; statistical, epidemiological, and quasi-experimental methodologies; analytics of large data sets; and economic evaluation. They enjoy an intimate learning environment in which they can easily interact with program faculty as well as develop strong collaborative ties to hospitals, clinical departments, and the Clinical and Translational Sciences Institute at the University of Rochester Medical Center. Our students regularly present posters and give podium presentations at major conferences, and publish in high-impact journals their research on quality, access, cost, and outcomes of health care services to inform policy and practice. Our alumni have gone on to faculty positions at Duke, Yale, NYU, and other universities in the U.S.; positions at RAND, other think tanks, and consulting firms; and government jobs in state health departments and in the Department of Health and Human Services. You are welcome to contact us for more information about our doctoral program in health services research and policy, and to discuss how we can help you reach your educational and career goals.

Our PhD can be combined with other degrees such as the MPH or MD. For PhD programs in HSRP and EPI, part-time study is not accommodated. Stipends, tuition grants, and training and travel expenses are provided for doctoral study. Join a diverse student body with education and experience in many health-related fields. Open selection of courses from different schools in the University allows for a unique range of options—for example, the School of Medicine and Dentistry, the College of Arts and Sciences, and the Goergen Institute for Data Science.

Our MS program in health services research and policy provides students with a multidisciplinary foundation in the fundamental elements of health services research, including health policy, biostatistical methods, health economics, epidemiology, psychology, and outcomes assessment.

The advanced certificate in health services research is designed to give individuals the knowledge and tools needed to evaluate the effectiveness of health services programs and policies.

Mission Statement and Strategic Goals

Our PhD program is designed to produce researchers who generate knowledge and strategies used in solving healthcare problems. The program prepares students for a career in academia, government or the private sector.

Our MS program in health services research and policy is a 31-credit course of study designed to provide students with the knowledge and skills needed to conduct high-quality health services and policy analysis. Students completing the program will be well prepared to take positions in a wide variety of private and public institutions engaged in health care management, health services research, and health policy work.

The health services research certificate provides researchers and other interested individuals with a practical understanding of health services research methods including cost-effectiveness analysis, impact analysis, and implementation research.

PhD: https://www.urmc.rochester.edu/education/graduate/phd/health-services-research-policy.aspx

MS: https://www.urmc.rochester.edu/education/graduate/masters-degrees/health-services-research-policy.aspx

Advanced Certificate: https://www.urmc.rochester.edu/education/graduate/certificate/adv-certificate-in-health-services-research.aspx

Graduate Faculty Information

Shubing Cai, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Public Health Sciences

Elaine L. Hill, PhD, *Cornell University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Economics (AS&E), Obstetrics and Gynecology

Yue Li, PhD, *University of Rochester*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Psychiatry

Brian McGarry, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Medicine, Geriatrics/Aging
Joint Appointment(s): Public Health Sciences

Daniel Maeng, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Public Health Sciences, Anesthesiology and Perioperative Medicine

Helena Temkin-Greener, PhD, *University of Massachusetts, Amherst*
Professor Emeritus
Primary Appointment(s): Public Health Sciences

Zijing (Flora) Cheng, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Urology
Joint Appointment(s): Public Health Sciences

Admissions

Applying to Doctoral Programs

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

We expect all application materials (with the exception of official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

Application Requirements

- SOPHAS application
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Three letters of recommendation
- Writing sample
- Applicants whose native language is not English must demonstrate English proficiency by providing official scores within two years of the original test date. Acceptable test types: official TOEFL (SMD school code: 2948; SOPHAS application code: 5688), IELTS, and DuoLingo scores.
- CV or resume (optional)

Please do not include secondary school documentation or financial documentation as these are not used during the admissions process.

Application Timeline

Admission is for fall semester:

- December 1 – Complete application due
- After December 1 – Applications accepted on a rolling basis until January 1, at program's discretion
- December to January – Interviews scheduled
- February – Interviews held at University of Rochester Medical Center

- February to March – Offer of admission notices mailed after interviews
- April 15 – Responses due for offer of admission
- August or September – Fall semester begins

Applying to Master's Programs

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

We expect all application materials (with the exception of official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

Application Requirements

- SOPHAS application
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Three letters of recommendation
- Writing sample
- Applicants whose native language is not English must demonstrate English proficiency by providing official scores within two years of the original test date. Acceptable test types: official TOEFL (SMD school code: 2948; SOPHAS application code: 5688), IELTS, and DuoLingo scores.

Optional Materials

- CV or resume
- Research papers, publications, and other original works

Please do not include secondary school documentation or financial documentation as these are not used during the admissions process. Application deadlines are May 1 for the fall semester and November 1 for the spring semester.

Applying to Advanced Certificates

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Application Requirements

We expect that all application materials (with the exception of official score reports) be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

- Online application (recommended browser: Google Chrome)
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Official TOEFL (institution code: 2948) or IELTS score (if native language is not English)
- CV or resume
- Research papers, publications, and other original works for consideration (not required)

Please do not include secondary school documentation or financial documentation, as these are not used during the admissions process. Application deadlines are May 1 for the fall semester and November 1 for the spring semester.

Academics

Advanced Certificates and Requirements

The advanced certificate program is a post-baccalaureate course of academic study designed for students and practitioners who seek to enhance their professional development. Certificates consist of four or five courses for a total of 12 to 15 credits.

GRADUATE COURSE TITLES

PM421. Introduction to U.S. Health Care System
PM445. Introduction to Health Services Research and Policy
PM415. Principles of Epidemiology
PM410. Introduction to Data Management/Analysis With SAS
PM464. Introduction to Regression Analysis
PM460. Master's Essay
PM422. Quality of Care and Risk Adjustment
PM456. Health Economics I
PM463. Introduction to Mathematical Statistics Pt 1
PM485. Introduction to Biomedical Informatics
PM430. Psychology in Health Services Research
PM484. Cost-Effectiveness Research

Master's Degrees and Requirements

A program of study will be determined individually with the program director. Students must complete 31 credits of coursework, including six credits for a master's essay. Additional courses can be taken for audit or credit. Upon completion, students will:

- Appreciate the multidisciplinary nature of health services research
- Understand the structure, financing, and performance of the U.S. health care system
- Be familiar with quantitative and qualitative analyses of health care services and policy
- Understand the basic principles of statistical analysis, econometrics, quality assessment, and comparative effectiveness analysis
- Understand current methods used to formulate health care policy

- Know how to conduct basic statistical tests and regression analysis
- Know how to interpret health services research studies
- Be able to perform decision analysis and comparative effectiveness analysis
- Learn how to risk-adjust health care data
- Be able to perform a health care policy analysis

GRADUATE COURSE TITLES

PM421. Introduction to U.S. Health Care System
PM445. Introduction to Health Services Research and Policy
PM415. Principles of Epidemiology
PM410. Introduction to Data Management/Analysis With SAS
PM464. Introduction to Regression Analysis
PM460. Master's Essay
PM422. Quality of Care and Risk Adjustment
PM456. Health Economics I
PM463. Introduction to Mathematical Statistics Part 1
PM485. Introduction to Biomedical Informatics
PM430. Psychology in Health Services Research
PM484. Cost-Effectiveness Research

Doctoral Degrees and Requirements

All incoming first-year students are required to participate in Math Camp two weeks before the start of fall semester. Core courses that form the basis of the comprehensive exams are completed in the first two years; depending on cohort and individual plans, additional courses may be required in the third year. Comprehensive exams are required in May of the second year; if the student does not pass this exam, they may retake the exam before the end of the calendar year. After the comprehensive exams, students typically begin fulfilling their required research assistantships and teaching assistantships.

After taking the comprehensive exams, students are expected to begin developing a formal dissertation proposal. Students are expected to have:

- a proposal topic selected by November of the third year
- a theory and conceptual framework identified by March of the third year
- data identified by June of the third year, and
- methods identified by September of the fourth year.

For each milestone, progress and completion are to be periodically reviewed with the student's advisor. A dissertation committee must be formed and a proposal date scheduled by December of the fourth year. The proposal (which is the University's qualifying exam) must be completed by January of the fourth year. The dissertation is expected to be completed within two years of a successful proposal.

GRADUATE COURSE TITLES

PM 421. Introduction to U.S. Health Care System
PM 445. Introduction to Health Services Research and Policy
PM 430. Psychology in Health Services Research
PM 412. Survey Research
PM 428. Health Services Research Seminar
PM 463. Introduction to Mathematical Statistics Part I
PM 464. Statistics II: Introduction to Regression Analysis
PM 472. Measurement and Evaluation of Research Instruments
PM 484. Cost Effectiveness Research
PM 487. Fundamentals of Science, Technology, and Health Policy
PM 410. Introduction to Data Management/Analysis With SAS
PM 415. Principles of Epidemiology
PM 416. Epidemiologic Methods
PM 426. Social and Behavioral Medicine
PM 438. Grantsmanship
PM 422. Quality of Care and Risk Adjustment
PM 431. Advanced Methods in Health Services Research
PM 456. Health Economics I
PM 483. Advanced Health Economics II
PM 465. Advanced Multivariate Analysis
BST 479. Generalized Linear Models
NLX 479. Foundations of Healthcare Leadership
DSCC 465. Introduction to Statistical Machine Learning

Immunology, Microbiology, and Virology (MS)

Jacques Robert
Chair and Program Director

Overview

This degree program is designed to actively prepare graduates for careers in biomedical research by allowing them to earn both BS and MS degrees in five years.

Mission Statement and Strategic Goals

In the MS in immunology, microbiology, and virology program, selected students receive intensive, advanced training in the allied fields of immunology, microbiology, virology, and biotechnology, with a focus on hands-on research and real-world skills, including critical scientific thinking, scientific communication, group dynamic, problem-solving and data analysis, and instruction in drug discovery. The goals are to reflect the interconnectivity and complexity of biomedical sciences as well as the increasing requirement for teamwork in problem-solving in the workforce.

https://www.urmc.rochester.edu/education/graduate/masters-degrees/masters-immunology-microbiology-virology.aspx

Graduate Faculty Information

Jennifer Anolik, MD, PhD, *University of Rochester*
- Professor
- Primary Appointment(s): Medicine–Allergy, Immunology, and Rheumatology
- Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Stephen Dewhurst, PhD, *University of Nebraska*
- Professor
- Albert and Phyllis Ritterson Professorship; Vice Dean for Research, SMD; Associate Vice President for Health Sciences Research–Office of Senior VP for Research (UR)
- Primary Appointment(s): Microbiology and Immunology

Paul Dunman, PhD, *University of Medicine and Dentistry of New Jersey*
- Professor
- Primary Appointment(s): Microbiology and Immunology
- Joint Appointment(s): Ophthalmology

Michelle Dziejman, PhD, *University of Pennsylvania*
- Associate Professor
- Primary Appointment(s): Microbiology and Immunology

Scott Gerber, PhD, *University of Rochester*
- Associate Professor
- Primary Appointment(s): Surgery
- Joint Appointment(s): Cancer Center, Microbiology and Immunology, Radiation Oncology

Steve Georas, MD, *Brown University*
- Professor
- Walter & Carmina Mary Parkes Family Distinguished Professorship
- Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
- Joint Appointment(s): Microbiology and Immunology

Steven Gill, PhD, *Kansas State University*
- Professor
- Primary Appointment(s): Microbiology and Immunology, Environmental Medicine

Stephen Hammes, MD, PhD, *Duke University*
- Professor
- Primary Appointment(s): Medicine—Endocrine/Metabolism
- Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine, Pharmacology and Physiology

Kirsi Järvinen-Seppo, MD, PhD, *University of Helsinki*
- Professor
- Founders' Distinguished Professorship of Pediatric Allergy
- Primary Appointment(s): Pediatrics; Allergy, Immunology and Rheumatology
- Joint Appointment(s): Medicine–Allergy, Immunology and Rheumatology; Microbiology and Immunology

Minsoo Kim, PhD, *Ohio State University*
- Professor
- Dean's Professorship in Microbiology and Immunology
- Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology
- Joint Appointment(s): Pharmacology and Physiology

Paige Lawrence, PhD, *Cornell University*
- Professor
- Wright Family Research Professorship
- Primary Appointment(s): Environmental Medicine
- Joint Appointment(s): Microbiology and Immunology

Allison Lopatkin, PhD, *Duke University*
- Assistant Professor
- Primary Appointment(s): Chemical Engineering
- Joint Appointment(s): Microbiology and Immunology

Cynthia Monaco, MD, PhD, *University of Texas at Dallas*
- Assistant Professor
- Primary Appointment(s): Medicine
- Joint Appointment(s): Microbiology and Immunology

Craig Morrell, DVM, PhD, *Tufts University*
Professor
Dean's Professorship, Department of Medicine; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine
Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Timothy Mosmann, PhD, *University of British Columbia*
Professor
Director, Center for Vaccine Biology and Immunology; Michael and Angela Pichichero Director in the David H. Smith Center for Vaccine Biology and Immunology
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Joshua Munger, PhD, *University of Chicago*
Professor
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Microbiology and Immunology

Shawn Murphy, PhD, *Duke University*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Microbiology and Immunology

Gowrishankar Muthukrishnan, PhD, *University of Central Florida*
Assistant Professor
Primary Appointment(s): Orthopaedics, Center for Musculoskeletal Research
Joint Appointment(s): Microbiology and Immunology

Jennifer Nayak, MD, *University at Buffalo*
Associate Professor
Primary Appointment(s): Pediatrics, Infectious Diseases
Joint Appointment(s): Microbiology and Immunology

Martin Pavelka, PhD, *University of Rochester*
Professor
Primary Appointment(s): Microbiology and Immunology

Jacques Robert, PhD, *University of Geneva*
Professor
Chair, Department of Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Environmental Medicine

Marlies Rossmann, MD, *Free University* and *Humboldt University, Germany,* PhD, *SUNY Stony Brook*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Microbiology and Immunology

Andrea Sant, PhD, *Washington University*
Professor
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Kristen Scheible, MD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics, Neonatology
Joint Appointment(s): Microbiology and Immunology

Edward Schwarz, PhD, *Einstein College of Medicine*
Professor
Richard and Margaret Burton Distinguished Professor in Orthopaedics; Director, Center for Musculoskeletal Research
Primary Appointment(s): Orthopaedics
Joint Appointment(s): Pathology and Laboratory Medicine; Medicine–Allergy, Immunology, and Rheumatology; Biomedical Engineering; Microbiology and Immunology

Ruth Serra-Moreno, PhD, *University of Barcelona*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Meera Singh, PhD, *University of Pune*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Microbiology and Immunology

Yan Sun, PhD, *University of Illinois Urbana–Champaign*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Toru Takimoto, DVM, PhD, *Hokkaido University–Sapporo*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Juilee Thakar, PhD, *University of Wurzburg*
Associate Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Biostatistics and Computational Biology, Biomedical Genetics

David Topham, PhD, *University of Vermont*
Professor
Director, Translational Immunology and Infectious Diseases Institute; Marie Curran Wilson and Joseph Chamberlain Wilson Professorship
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Andrew Varble, PhD, *Icahn School of Medicine at Mount Sinai*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Brian Ward, PhD, *University of Illinois Urbana-Champaign*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Rachel Wozniak, MD, PhD, *Tufts University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Microbiology and Immunology, Center for Visual Science

Terry Wright, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics
Joint Appointment(s): Microbiology and Immunology

Felix Yarovinsky, MD, *Russian State Medical University*
Professor
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Yiping Zhu, PhD, *Institute of Biophysics, Chinese Academy of Sciences*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Admissions

Applying to Doctoral Programs

Applicants need to be currently matriculated University of Rochester undergraduates with a strong academic record, including a minimum 3.3 GPA in the microbiology major, and have demonstrated commitment to pursue research (for example, IND/MBI 395. Independent Research). The process starts with a pre-application sent by email to the microbiology advisor, Jacques Robert. This requires a one-page personal statement containing scientific interest and career goals, a letter of recommendation from an independent research instructor or supervisor (preferably the IND/MBI 395 independent research supervisor), and unofficial transcripts. Interviews are then scheduled with the program director and members of the admissions committee. After the committee makes a decision to pre-accept the candidate, a full official application has to be filled online before May 1. This formal application requires the same personal statement, three letters of recommendation by professors in the major discipline (the recommendations for the pre-application may be used), and official University of Rochester transcripts. The final offer is made before or on July 1.

Academics

Master's Degrees and Requirements

The BS/MS program components include didactic courses and intensive advanced training in the allied fields of immunology, microbiology, virology, and biotechnology, with a focus on hands-on research and "real world" skills. These include critical scientific thinking, scientific communication, group dynamic, problem-solving and data analysis, instruction in drug discovery, and development of an independent thesis research project.

Students are required to successfully complete all of the following for the master's degree to be granted:

- Coursework in three disciplines: immunology, microbiology, and virology
- Coursework in scientific writing and critical thinking
- Coursework relevant to the development of new biological products and therapeutics (such as drug discovery)
- Participation in interactive and team-oriented workshops designed to increase understanding of cutting-edge technologies (such as bioinformatics, genomics, biostatistics, and data analysis)
- Identifying and developing a research topic under the guidance of a faculty advisor
- Establishing an advisory/examination committee of four faculty members
- Satisfactorily completing a thesis and oral examination covering this subject matter and defending the thesis

This degree program allows students to begin work toward the master's degree in the senior year of undergraduate study. Up to 10 graduate-level credits can be shared between the undergraduate and graduate degrees. As a result, students admitted to the BS/MS program receive their BS and MS degrees in five years—a reduction of one year from the typical "4 plus 2" years of study.

GRADUATE COURSES TITLES

IND 501. Ethics in Research
MBI 402. Writing in Microbiology
MBI 403. Drug Discovery
MBI 519. Experimental Design and Analysis
MBI 496. MS Project I and MS Project II
MBI 501. Microbiology and Immunology Student Seminar
MBI 404. Introduction to Emerging Pathogens
MBI 414. Microbial Pathogenesis
MBI 421. Microbial Genetics and Physiology
MBI 456. General Virology
MBI 473. Immunology
MBI 540. Topics in Immunology
MBI 514. Microbial Pathogenesis Seminar
MBI 521. Microbial Genetics and Physiology Seminar
MBI 570. Advanced Topics in Microbiology
MBI 573. Immunology Seminar
MBI 588. Virology Research Seminar
MBI 589. Advanced Topics in Virology

Marriage and Family Therapy

Hochang Benjamin Lee
Department of Psychiatry Chair
Susan H. McDaniel
Institute for the Family Director
Jenny Speice
Program Director
Kristin Koberstein
Associate Program Director
Lauren DeCaporale-Ryan
Post Degree Training Program Director

Overview

Our program emphasizes strength-based and culturally attuned approaches to individual, couple, and family therapy, based on a biopsychosocial approach across the lifespan. A rich, multidisciplinary context prepares well-trained relational systemic (MFT) clinicians who can work in a variety of traditional mental health care settings, private practice, schools, and integrated health care settings.

Students receive training in the major approaches to individual, couple, and family therapy conceptual and clinical models. They learn theories of individual and family development across the life cycle, basic family research, evidence-informed treatments, and professional ethics as a relational systemic clinician with a focus on self-of-the-therapist and lifelong learning.

The program is housed in the Department of Psychiatry in the University of Rochester Medical Center, so our students are embedded in a clinical practice site/hospital rather than a college campus setting. This setting provides the unique opportunity to learn about mental health and families in a collaborative, interdisciplinary context to meet the needs of our Rochester community. All students complete clinical training at Strong Family Therapy Services, our on-site clinic, regulated by the New York State Office of Mental Health. Several Rochester community clinics provide complementary experiences. Practicum students receive weekly individual and group supervision at each site from AAMFT-approved supervisors or supervisors who are equivalently trained to provide relational systemic supervision.

Graduates of the Family Therapy Training Program leave with a depth of MFT knowledge and skill to competently practice as relational systemic professionals serving diverse communities with cultural attunement, self-reflection, and a commitment to lifelong learning.

Mission Statement and Strategic Goals

Our mission is to prepare competent relational systemic therapists (MFTs) to care for and promote biopsychosocial/whole health with people across diverse communities.

https://www.urmc.rochester.edu/psychiatry/institute-for-the-family/family-therapy/masters.aspx

Graduate Faculty Information

Ann Cornell, PsyD, *Illinois School of Professional Psychology–Argosy University*
Associate Professor of Psychiatry
Primary Appointment(s): Psychiatry

Lauren DeCaporale-Ryan, PhD, *University of Missouri–St. Louis*
Associate Professor of Psychiatry, Surgery, and Medicine
Director, Family Therapy Post Degree Training Program
Primary Appointment(s): Psychiatry
Joint Appointment(s): Surgery, Medicine

Gabrielle Gebel, PhD, *Adler University*
Senior Instructor, Department of Psychiatry, Psychology (SMD)
Primary Appointment(s): Psychiatry

Jessica Goodman, PhD, *East Carolina University*
Assistant Professor of Psychiatry
Primary Appointment(s): Psychiatry

Kristin Koberstein, PhD, *University of Rochester (Warner School of Education)*
Senior Instructor, Department of Psychiatry, Family/ Marriage (SMD)
Primary Appointment(s): Psychiatry

Susan H. McDaniel, PhD, *University of North Carolina at Chapel Hill*
Professor of Psychiatry and Family Medicine
Dr. Laurie Sands Distinguished Professor of Families and Health; Director, Institute for the Family, Department of Psychiatry; Vice Chair, Department of Family Medicine
Primary Appointment(s): Psychiatry
Joint Appointment(s): Family Medicine

Jessica Moore, PhD, *University of North Carolina at Greensboro*
Assistant Professor of Psychiatry
Clinic Director, Strong Family Therapy Services, Senior Director for Hospital Based Ambulatory Services for the CCW division
Primary Appointment(s): Psychiatry
Joint Appointment(s): Pediatrics

Carol Podgorski, PhD, *University of Rochester*
Professor of Psychiatry
Associate Chair of Faculty Affairs, Department of Psychiatry
Primary Appointment(s): Psychiatry

Tziporah Rosenberg, PhD, *Syracuse University*
Associate Professor of Psychiatry and Family Medicine
Associate Chair of Education, Department of Psychiatry
Primary Appointment(s): Psychiatry
Joint Appointment(s): Family Medicine

Lindsay Sycz, PsyD, *Roosevelt University*

Assistant Professor of Psychiatry and OB/GYN
Associate Director, Integrated Care Family Psychology Postdoctoral Fellowship
Primary Appointment(s): Psychiatry
Joint Appointment(s): OB/GYN

Jenny Speice, PhD, *Virginia Tech*
Associate Professor of Psychiatry
Director, MS MFT Program
Primary Appointment(s): Psychiatry

Michelle Swanger-Gagne, PhD, *University of Nebraska–Lincoln*
Associate Professor of Psychiatry and Pediatrics
Primary Appointment(s): Psychiatry
Joint Appointment(s): Pediatrics

William H. Watson, PhD, *Biola University*
Associate Professor of Psychiatry and Neurology
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neurology

Admissions

Applying to Master's Program

Applicants must submit the following materials for consideration in their online application:

- Statement of purpose
- Transcripts from all previous college and university studies
- Three letters of recommendation
- Demonstrated English proficiency (e.g., TOEFL, IELTS, or DuoLingo test scores) for applicants whose native language is not English, unless approved for a waiver
- CV/resume (optional)
- Writing samples (optional)

The strongest applications indicate alignment with our program emphases on preparing relational systemic (MFT) therapists to serve diverse communities within a framework of biopsychosocial whole health, cultural attunement, self-reflection, and a commitment to lifelong learning.

Three MS MFT program faculty will interview selected applicants prior to recommending for admissions review.

Applying to Advanced Certificates

Applicants must have an approved master's or doctoral degree in an allied profession, with previous clinical experience, before entering the program. Applicants are required to submit the following materials for consideration in their online application:

- Statement of purpose
- Transcripts from all previous college and university studies
- Two letters of recommendation

The strongest applications indicate alignment with the goals of our advanced certificate program. We seek applicants with an informed understanding of marriage and family therapy; its focus on relational, systemic approaches to treatment; and our commitment to skills-focused, competency-based training. We meet with each applicant to carefully review their transcripts to identify the specific coursework and clinical experience that they would need to complete the certificate and meet requirements to be eligible for licensure as a MFT in New York State. A minimum of two Family Therapy Training Program faculty will interview selected applicants before recommending for admissions review.

Academics

Advanced Certificates and Requirements

The advanced certificate in marriage and family therapy provides training for professionals who already have an advanced clinical degree (MS/MA, MD, or PhD), and are interested in specialty training in family therapy theory and clinical practice. Students receive education in the major family therapy theories; systemic and relational approaches to clinical practice; and ethics and professional practice in the context of relational practice. Post-degree courses are offered in conjunction with courses in the master's program. In addition to coursework, trainees are required to complete a minimum of 300 supervised clinical hours practicing marriage and family therapy, 200 of which must be relational hours (that is, couple or family cases). The advanced certificate requires satisfactory completion of 30 credits and the clinical practicum.

REQUIRED TO BEGIN CLINICAL PRACTICUM:

PSI 421. Fundamentals of Family Therapy Practice or
PSI 539. Family Therapy Theory and Technique
PSI 548. Family Therapy Ethics and Professional Practice
PSI 543. Psychopathology and Systems
PSI 494. Couples Therapy, Families, and Illness or
PSI 566. Couples Therapy

ELECTIVES

PSI 498. Medical Family Therapy Intensive
PSI 426. Integrated Mind-Body Practices
PSI 433. The Practice of Medical Family Therapy
PSI 425. Special Topics in Integrated Care Practices
PSI 545. Human Development Across the Life Cycle
PSI 542. Clinical Assessment in Family Therapy
PSI 548. Family Therapy Ethics and Professional Practice
PSI 570. Intersection of Race, Gender, Sexuality and Other Cultural Identities in Clinical Practice
PSI 572. Family Therapy Research
PSI 574. Child-Focused Family Therapy
PSI 560. Narrative and Integrative Approaches to Family Therapy
PSI 562. Family Therapy Practice
PSI 564. Family Law, Policy, and Social Systems

Master's Degrees and Requirement

The MS program is a 60-credit-hour curriculum. It has accreditation from the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) and is also an

approved New York State-registered program leading to licensure in marriage and family therapy. The curriculum is designed to train family therapists to work in the changing health and mental health environment.

Students must take all the core courses, including a master's project. Successful completion of core didactic coursework is required before students begin clinical practicum. Students have direct client contact during the clinical practicum, which continues until the completion of a minimum of 500 hours of supervised clinical practice with individuals, couples, and families, with demonstrated competencies. The MS MFT program goals include: demonstrate knowledge of the MFT profession; demonstrate ability to provide culturally attuned, evidence-informed, ethical care to a broad diversity of patients and families as a self-reflective relational systemic clinician; and demonstrate lifelong learning practices.

GRADUATE COURSE TITLES

PSI 539. Family Therapy Theory and Technique
PSI 541. Foundations of Clinical Practice in Family Therapy
PSI 543. Psychopathology and Systems
PSI 545. Human Development Across the Life Cycle
PSI 566. Couples Therapy
PSI 542. Clinical Assessment in Family Therapy
PSI 548. Family Therapy Ethics and Professional Practice
PSI 570 . Intersection of Race, Gender, Sexuality, and Other Cultural Identities in Clinical Practice
PSI 572. Family Therapy Research
PSI 574. Child-Focused Family Therapy
PSI 492. Medical Family Therapy Intensive
PSI 560. Narrative and Integrative Approaches to Family Therapy
PSI 562. Family Therapy Practice
PSI 564. Family Law, Policy, and Social Systems
PSI 584. Master's Project
PSI 587 /588. Clinical Practicum
PSI 421. Fundamentals of Family Therapy Practice
PSI 494. Couples Therapy, Families, and Illness
PSI 426. Integrated Mind-Body Practices
PSI 433. The Practice of Medical Family Therapy
PSI 425. Special Topics in Integrated Care Practices

Medical Pharmacology

Robert T. Dirksen
Chair

Angela J. Glading
Program Director

Overview

The objective of the medical pharmacology program is to provide students with advanced academic training in fundamental biomedical sciences along with professional development skills that will allow them to craft stronger, more competitive applications for entry into professional degree programs in medicine, dentistry, or similar professional health careers. The program is structured as a Plan B MS degree program and is administered by the Department of Pharmacology and Physiology. As such, it is integrated with the other MS and PhD degree programs administered by the department and includes coursework in pharmacology, physiology, and human anatomy as well as participation in departmental seminars. The program culminates with completion of a comprehensive, scholarly review of the primary literature surrounding a topic pertinent to pharmacology or experimental therapeutics. Upon successful completion of the program, students are awarded the MS degree in medical pharmacology.

Mission Statement and Strategic Goals

We train and mentor aspiring health care professionals to better position them for entry into professional degree programs in medicine or dentistry. This is accomplished via three strategic goals: First, we provide instruction in foundational pharmacology, physiology, and human anatomy concepts as well as the latest conceptual and technical developments in experimental therapeutics. Second, we help our learners develop critical thinking and quantitative reasoning skills, and we provide them with opportunities to use these skills to synthesize and critically evaluate scientific hypotheses and data. Third, we provide students with the knowledge and insight to improve their written and oral communication skills, to recognize and adhere to ethical standards and moral principles, and to engage in reflective practices for continued self-improvement.

https://www.urmc.rochester.edu/education/graduate/masters-degrees/medical-pharmacology.aspx

Graduate Faculty Information

Douglas M. Anderson, PhD, *Arizona State University*
Assistant Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology

Bradford C. Berk, MD, PhD, *University of Rochester*
Professor
Distinguished University Professor; Director, Neurorestoration Institute
Primary Appointment(s): Medicine, Cardiology
Joint Appointment(s): Neurology, Pharmacology and Physiology

Jean M. Bidlack, PhD, *University of Rochester*
Professor
Associate Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Paul S. Brookes, PhD, *University of Cambridge*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Laura M. Calvi, MD, *Harvard University*
Professor
SKAWA Foundation Professor
Primary Appointment(s): Medicine–Endocrine/Metabolism
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine

Chike Cao, PhD, *Rutgers University*
Assistant Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology

David A. Dean, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Ian M. Dickerson, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Thomas Diekwisch, DMD, PhD, *The Philipp University of Marburg*
Professor
Margaret and Cy Welcher Professorship in Dental Research; Chair, Oral and Craniofacial Sciences
Primary Appointment(s): Oral and Craniofacial Sciences, Eastman Institute for Oral Health
Joint Appointment(s): Periodontology, Pharmacology and Physiology

Robert T. Dirksen, PhD, *University of Rochester*
Professor
Lewis Pratt Ross Professorship of Pharmacology and Physiology; Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Scott Earley, PhD, *University of New Mexico*
Professor
Primary Appointment(s): Pharmacology and Physiology

Yumei Feng Earley, MD, *Zhejiang University;* PhD, *Chongqing University*
Professor
Primary Appointment(s): Medicine–Nephrology
Joint Appointment(s): Pharmacology and Physiology

Roman S. Eliseev, MD, *Russian State Medical University;* PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine

Megan Falsetta Wood, PhD, *University of Iowa*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Pharmacology and Physiology

Fabeha Fazal, PhD, *Aligarth Muslim University*
Associate Professor
Primary Appointment(s): Pediatrics, Neonatology
Joint Appointment(s): Pharmacology and Physiology

Manoela V. Fogaça, PhD, *University of Sao Paulo*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Angela J. Glading, PhD, *University of Pittsburgh*
Associate Professor
Director, Medical Pharmacology Master's Program
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Biomedical Engineering, Pathology and Laboratory Medicine

Suzanne N. Haber, PhD, *Stanford University*
Professor
Dean's Professorship in Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience, Psychiatry

Stephen R. Hammes, MD, PhD, *Duke University*
Professor
Louis S. Wolk Distinguished Professorship in Medicine; Chief, Endocrine/Metabolism; Executive Vice Chair, Medicine
Primary Appointment(s): Medicine
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine, Microbiology and Immunology

Isaac S. Harris, PhD, *University of Toronto*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pharmacology and Physiology

Denise C. Hocking, PhD, *Albany Medical College*
Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Biomedical Engineering

J. Christopher Holt, PhD, *Tulane University*
Associate Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Zheng-Gen Jin, PhD, *China*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

Gail V. W. Johnson, PhD, *University of Delaware*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Paul J. Kammermeier, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Minsoo Kim, PhD, *The Ohio State University*
Professor
Dean's Professorship in Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology, Center Vaccine Biology and Immunology
Joint Appointment(s): Pharmacology and Physiology

Whasil Lee, PhD, *Duke University*
Associate Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Pharmacology and Physiology

John D. Lueck, PhD, *University of Rochester*
Associate Professor
Co-Director, Cellular and Molecular Pharmacology and Physiology Program
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neurology

David M. MacLean, PhD, *McGill University*
Associate Professor
Paul Stark Professorship in Pharmacology; Co-Director, Cellular and Molecular Pharmacology and Physiology Program
Primary Appointment(s): Pharmacology and Physiology

Julian P. Meeks, PhD, *Washington University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pediatrics, Pharmacology and Physiology

Craig Morrell, PhD, *Johns Hopkins University;* DVM, *Tufts University School of Veterinary Medicine*
Professor
Dean's Professorship in Medicine; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine

Maiken Nedergaard, MD, DMSc, *University of Copenhagen*
Professor
Co-Director, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Pharmacology and Physiology, Neurosurgery

Keith W. Nehrke, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine–Nephrology
Joint Appointment(s): Pharmacology and Physiology

John Onukwufor, PhD, *University of Prince Edward Island*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Environmental Medicine

Cesare Orlandi, PhD, *University of Brescia*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Makaia Papasergi-Scott, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Pharmacology and Physiology

George A. Porter, Jr., MD, PhD, *University of Rochester*
Professor
Rhea and Raymond White Professorship in Pediatric Cardiology; Chief, Pediatrics–Cardiology
Primary Appointment(s): Pediatrics–Cardiology
Joint Appointment(s): Pharmacology and Physiology, Medicine–Aab Cardiovascular Research Institute

Arshad Rahman, PhD, *Aligarth Muslim University*
Professor
Associate Director, Strong Children's Research Center
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Pharmacology and Physiology

Eileen M. Redmond, PhD, *University College Dublin*
Professor
Primary Appointment(s): Surgery
Joint Appointment(s): Pharmacology and Physiology

Eric M. Small, PhD, *University of Texas at Austin*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Michel S. Telias, PhD, *Tel Aviv University*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience, Pharmacology and Physiology, Center for Visual Science

V. Kaye Thomas, PhD, *New York University*
Assistant Professor
Technical Director, Center for Advanced Light Microscopy and Nanoscopy
Primary Appointment(s): Pharmacology and Physiology

Kuan Hong Wang, PhD, *University of California, San Francisco*
Professor
Dean's Professorship in Neuroscience
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

R. James White III, MD, PhD, *University of Pittsburgh*
Professor
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
Joint Appointment(s): Pharmacology and Physiology, Pediatrics

Andrew P. Wojtovich, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Houhui (Hugh) Xia, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Chen Yan, PhD, *University of Washington*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

Peng Yao, PhD, *China-Chinese Academy of Sciences*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Biochemistry and Biophysics

Zhenqiang Yao, PhD, *University of Westminster*
Associate Professor
Primary Appointment(s): Pathology and Laboratory Medicine
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering, Dentistry

Shu-Chi Yeh, PhD, *McMaster University*
Assistant Professor
Primary Appointment(s): Orthopedics–Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

David I. Yule, PhD, *University of Liverpool*
Professor
Louis C. Lasagna Professorship in Experimental Therapeutics
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Center for Oral Biology, Medicine–Gastroenterology/Hepatology

Admissions

Applying to Master's Programs

Students are admitted in the fall semester only. Successful applicants to our MS program have a U.S. baccalaureate degree or its equivalent from a college or university of acceptable standing and intend to pursue a professional degree in medicine, dentistry, pharmacy, or similar professional health science career. While the majority of successful applicants have BS or BA degrees in basic or applied sciences such as biology, biochemistry, chemistry or biomedical engineering, students with degrees in other fields are welcome to apply. All applicants, regardless of their degree subject, must have completed all prerequisite coursework for their intended professional degree program before matriculating. (Common prerequisites for U.S. medical schools include at least one year of biology with laboratory; one year of physics with laboratory; and either two semesters of organic chemistry or one semester of organic and one semester of biochemistry, with laboratories.) Additional coursework in cell and molecular biology,

biochemistry, and statistics is encouraged but not required.

Successful applicants will typically have some prior exposure to clinical medicine, community health/wellness programs, or biomedical or health services research. Such exposure may come from volunteer experiences (for example, shadowing physicians), professional training or certifications, or full- or part-time employment in a health care field. Applicants must arrange to have at least three letters of support submitted on their behalf. These should be sent from people with direct knowledge of the applicant's potential to succeed in graduate school and their potential for success when ultimately applying to their chosen professional degree program. We also require a personal statement from each applicant.

We recognize that learners come from diverse backgrounds and life experiences, with varying levels of access to educational opportunities, employment, and related career-preparation resources, opportunities, and experiences. We also understand that each applicant has unique time and life commitments. In our experience, the best predictor of success in our MS program is not undergraduate GPA or ranking of the undergraduate institution. Rather, the best predictors are interest and motivation that are both genuine and deep, a strong work ethic, resilience, and an abundant capacity to adapt, grow, and learn. These factors can be difficult to demonstrate in a typical resume. Therefore, we encourage applicants to address the following criteria specifically in their personal statement: their enthusiasm, motivation, and preparation for their chosen career path; their specific reason(s) for applying to our MS program; and meaningful life circumstances that demonstrate their adaptability and resilience.

Application Requirements:

- Baccalaureate degree, or its equivalent, from an accredited institution
- Personal Statement
- All undergraduate, and graduate if applicable, transcripts.
- Resume or CV
- Three letters of recommendation
- Applicants whose native language is not English must dem¬onstrate English proficiency. Official scores must be within two years of the original test date.
- GRE or MCAT scores are not required, though they will be considered if provided.

Academics

Masters Degree and Requirements

The master's degree includes 30 credit hours of coursework, including the following required courses:

Fall Semester

- Ethics and Professional Integrity
- Human Cell Physiology
- Master's Readings
- Pharmacology and Physiology Seminar
- Professional Development
- Medical Pharmacology

Spring Semester

- Applied Human Anatomy
- Effective Scientific Communication
- Human Anatomy Practicum
- Master's Essay
- Advanced Topics in Pharmacology

In addition to above required courses, students must complete two to four credit hours of electives that can be chosen from

- Design of Clinical Trials
- Applied Statistics in Biomedical Sciences
- Foundations of Modern Biology II
- Leadership and Management for Scientists
- Science Outreach to All
- Stories in Healthcare
- History of Modern Medicine
- Introduction to Programming
- Current Microanatomy
- Biology of Neurological Diseases
- Neurobiology of Disease
- Signal Transduction
- Ion Channels and Disease
- Principles of Epidemiology
- Foundations in Public Health

Students may take electives not on this list with the approval of the medical pharmacology graduate committee.

Students also complete a detailed, critical assessment of the primary scientific literature on a current or emerging topic of interest in pharmacology or experimental therapeutics. Early in the fall semester, students consult with their faculty advisor to identify an additional faculty mentor with expertise in their topic of interest. With guidance from their mentors, students complete a master's essay that presents a critical review of the chosen topic. They formally present and defend key aspects of their master's essay during an oral exam conducted by a faculty committee.

GRADUATE COURSE TITLES

BST 465. Design of Clinical Trials
BST 467. Applied Statistics in Biomedical Sciences
IND 432. Foundations of Modern Biology II
IND 439. Leadership & Management for Scientists
IND 442. Science Outreach to All
MHB 420. Stories in Healthcare
MHB 421. History of Modern Medicine
NSC 410. Intro to Programming
NSC 525. Neurobiology of Disease
PHP 403. Human Cell Physiology
PHP 405. Effective Scientific Communication
PHP 447. Signal Transduction
PHP 463. Human Anatomy Practicum
PHP 467. Statistical Rigor and Data Analysis

PHP 491. Master's Readings
PHP 492. Master's Essay
PHP 502. Pharmacology and Physiology Seminar
PHP 530. Advanced Topics in Pharmacology
PHP 550. Ion Channels and Disease
PHP 593. Professional Development
PHP 623. Medical Pharmacology
PM 415. Principles of Epidemiology
PM 455. Foundations in Public Health

Medical Physics

Dandan Zheng
Chief of Medical Physics

Sean Tanny
Medical Physics Graduate Program Director

Overview

Our clinically focused, two-year program is designed to prepare students to pursue residency training and a career as a clinical medical physicist. We are looking for students who are eager to use their technical knowledge to improve patient care through imaging and treatment. Our faculty includes imaging physicists, therapy physicists, radiobiologists, and oncologists who are dedicated to preparing our students for a rewarding career in medical physics. We have designed this program to feature a strong background in the fundamentals of radiation physics, medical imaging, and radiation therapy, with hands-on practical rotations that allow students to engage with equipment and techniques that they will encounter throughout their careers.

Mission Statement and Strategic Goals

Our program's mission is to train safe, knowledgeable, future leaders in medical physics through teaching, hands-on instruction, and directed research on novel technologies and treatments. We achieve this with our comprehensive curriculum, intensive lab and clinical rotation schedules, and focus on directed and independent thesis research projects.

http://www.medicalphysics.urmc.edu

Graduate Faculty Information

Michael Ashenafi, MS, *Louisiana State University*
Associate Professor
Primary Appointment(s): Radiation Oncology

Yuhchyau Chen, MD, *University of Washington*
Professor
Chair of Radiation Oncology
Primary Appointment(s): Radiation Oncology

Nebojsa Duric, PhD, *University of Toronto*
Professor
Vice Chair of Research in Imaging Science
Primary Appointment(s): Imaging Science
Joint Appointment(s): Electrical and Computer Engineering, Biomedical Engineering

Robert Freeman, PhD, *University of California, San Diego*
Professor
Director of Medical Pharmacology
Primary Appointment(s): Medical Pharmacology and Physiology

Kimberly Gergelis, MD, *Yeshiva University Albert Einstein College of Medicine*
Assistant Professor
Primary Appointment(s): Radiation Oncology

Hyunuk Jung, PhD, *Medical Physics, Sungkyunkwan University*
Assistant Professor
Primary Appointment(s): Radiation Oncology

Fiona Li, PhD, *University of Western Ontario*
Assistant Professor
Primary Appointment(s): Radiation Oncology

Brian Marples, PhD, *University of London*
Professor
Dr. Sidney H. and Barbara L. Sobel Professor in Radiation Oncology
Primary Appointment(s): Radiation Oncology

Mohammad Mehrmohammadi, PhD, *University of Texas at Austin*
Associate Professor
Primary Appointment(s): Imaging Science
Joint Appointment(s): Interim Associate Professor, Biomedical Engineering; Interim Associate Professor, Obstetrics and Gynecology

Matthew Pacella, MS, *University at Buffalo*
Associate Professor
Clinical Director
Primary Appointment(s): Radiation Oncology

Alexander Podgorsak, PhD, *University at Buffalo*
Assistant Professor
Primary Appointment(s): Radiation Oncology

Sean Tanny, PhD, *University of Toledo*
Assistant Professor
Director, Medical Physicist Graduate Program
Primary Appointment(s): Radiation Oncology

Matt Webster, PhD, *University of California, San Diego*
Assistant Professor
Director, Medical Physics Residency
Primary Appointment(s): Radiation Oncology

Jihyung (James) Yoon, PhD, *East Carolina University*
Assistant Professor
Primary Appointment(s): Radiation Oncology

Dandan Zheng, PhD, *University of California, Davis*
Professor
Director, Medical Physics Radiation Oncology
Primary Appointment(s): Radiation Oncology

Yuwei Zhou, PhD, *University of Miami*
Assistant Professor
Primary Appointment(s): Radiation Oncology

Admissions

Applying to Master's Programs

Successful candidates have a strong background in undergraduate physics, but do not need to have been physics majors. Computer or data science, imaging science, engineering, chemistry, and biology majors are all good fits for our program. Experience with image manipulation, object-oriented programming, machine learning, and radiation physics will all be considered as an additional boon to any potential candidate. Past publications or research efforts will be factored in to the strength of any application.

Our ideal candidate is motivated with a strong background in science and computation, and has some basic research experience. They are looking to be involved clinically and to pursue a residency in medical physics. They want to become familiar with a wide range of clinical technologies and techniques, and to perform projects that will have a direct impact on the excellent care we provide to our patients at the Wilmot Cancer Institute.

Applicants must have the following:

- Bachelor's degree in physics or in a closely related field, such as natural science or engineering and must have the equivalent of at least 3 non-introductory physics courses that would be suitable for a minor in physics.
  - Courses can be substituted if the applicant can demonstrate equivalence with
    - Letter from course instructor
    - Copy of course syllabus
  - Must submit an official transcript for verification
- GPA greater than 3.0 out of 4.0 (preferred)

Applicants must have the following:

- Personal statement. No longer than two pages, it should
  - describe their motivation for pursuing graduate study in medical physics,
  - include career and academic goals, and
  - discuss experience in physics.
- Three professional or academic reference letters

Academics

Master's Degrees and Requirements

The program requires 41 credit hours of graduate-level work, which includes thesis research and clinical rotation credit. The program is 4.5 semesters, with students taking five credits over the summer semester. Students shall complete a thesis describing their original work.

GRADUATE COURSE TITLES

MP 401. Physics of Radiation Therapy
MP 402. Journal Seminar
MP 403 Physics of Medical Imaging
MP 410. Introduction to Anatomy and Physiology
MP 421. Radiation Dosimetry I
MP 422. Radiation Dosimetry II
MP 423. Radiation Protection, Safety, and Regulation
MP 424. Radiation Detection and Measurement
MP 425. Brachytherapy
MP 431. Computational Method
MP 432. Advanced Topics in Radiation Therapy
MP 441. Radiation Biology
MP 495. Independent Research
MP 501. Clinical Dosimetry Rotation I
MP 502. Clinical Dosimetry Rotation II
MP 503. Clinical Physics Rotation I
MP 504. Clinical Physics Rotation II

Microbiology and Immunology (MS)

Jacques Robert
Chair
Michelle Dziejman
Program Director

Overview

The Department of Microbiology and Immunology offers a graduate program leading to the MS degree in Microbiology and Immunology, with the goal of preparing students for scientific careers in diverse areas of microbiology (including bacteriology and virology) and immunological sciences. Research experience is coupled with graduate-level coursework to provide broad-based knowledge that supports multidisciplinary interests and approaches to problem solving—critical attributes of a scientist in our world today.

Mission Statement and Strategic Goals

The MS program is designed to be completed in two years of full-time study. During that time, our students engage in both didactic and workshop-style classes, read and discuss primary literature together with faculty in journal clubs, and develop presentation skills by participating in research-in-progress forums.

Beginning in the first semester, students conduct research under the direction of a faculty mentor based on faculty-developed projects. Research goals are focused on gaining practical training: to apply diverse approaches to scientific questions, develop critical thinking skills, learn experimental design, and execute experiments focused on a dedicated project. The program culminates in writing, and then orally defending, a thesis based on the research project. In addition, professional development seminars and workshops offered through myHub, within the Office of Graduate Education and Postdoctoral Affairs, provide opportunities to practice and enhance necessary skills and explore options post-graduation.

Our program aims to couple a solid academic foundation with hands-on bench research that prepares graduates to successfully pursue the next stage of their career in academic settings, biotech/pharmaceutical environments, or wherever their next goal lies.

https://www.urmc.rochester.edu/education/graduate/masters-degrees/masters-microbiology-immunology.aspx

Graduate Faculty Information

Jennifer Anolik, MD, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine–Allergy, Immunology, and Rheumatology
Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Stephen Dewhurst, PhD, *University of Nebraska*
Professor
Albert and Phyllis Ritterson Professorship; Vice Dean for Research, SMD; Associate Vice President for Health Sciences Research-Office of Senior VP for Research (UR)
Primary Appointment(s): Microbiology and Immunology

Paul Dunman, PhD, *University of Medicine and Dentistry of New Jersey*
Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Ophthalmology

Michelle Dziejman, PhD, *University of Pennsylvania*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Scott Gerber, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Surgery
Joint Appointment(s): Cancer Center, Microbiology and Immunology, Radiation Oncology

Steve Georas, MD, *Brown University*
Professor
Walter & Carmina Mary Parkes Family Distinguished Professorship
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
Joint Appointment(s): Microbiology and Immunology

Steven Gill, PhD, *Kansas State University*
Professor
Primary Appointment(s): Microbiology and Immunology, Environmental Medicine

Stephen Hammes, MD, PhD, *Duke University*
Professor
Primary Appointment(s): Medicine—Endocrine/Metabolism
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine, Pharmacology and Physiology

Kirsi Järvinen-Seppo, MD, PhD, *University of Helsinki*
Professor
Founders' Distinguished Professorship of Pediatric Allergy
Primary Appointment(s): Pediatrics, Allergy/Immunology
Joint Appointment(s): Medicine—Allergy, Immunology, and Rheumatology; Microbiology and Immunology

Minsoo Kim, PhD, *The Ohio State University*
Professor
Dean's Professorship in Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology
Joint Appointment(s): Pharmacology and Physiology

Paige Lawrence, PhD, *Cornell University*
Professor
Wright Family Research Professorship
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Microbiology and Immunology

Allison Lopatkin, PhD, *Duke University*
Assistant Professor
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Microbiology and Immunology

Cynthia Monaco, MD, PhD, *University of Texas at Dallas*
Assistant Professor
Primary Appointment(s): Medicine
Joint Appointment(s): Microbiology and Immunology

Craig Morrell, DVM, PhD, *Tufts University*
Professor
Dean's Professorship–Medicine; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine
Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Timothy Mosmann, PhD, *University of British Columbia*
Professor
Director, Center for Vaccine Biology and Immunology; Michael and Angela Pichichero Director in the David H. Smith Center for Vaccine Biology and Immunology
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Joshua Munger, PhD, *University of Chicago*
Professor
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Microbiology and Immunology

Shawn Murphy, PhD, *Duke University*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Microbiology and Immunology

Gowrishankar Muthukrishnan, PhD, *University of Central Florida*
Assistant Professor
Primary Appointment(s): Orthopaedics, Center for Musculoskeletal Research
Joint Appointment(s): Microbiology and Immunology

Jennifer Nayak, MD, *University at Buffalo*
Associate Professor
Primary Appointment(s): Pediatrics, Infectious Diseases
Joint Appointment(s): Microbiology and Immunology

Martin Pavelka, PhD, *University of Rochester*
Professor
Primary Appointment(s): Microbiology and Immunology

Jacques Robert, PhD, *University of Geneva*
Professor
Chair, Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Environmental Medicine

Marlies Rossmann, MD, *Free University and Humboldt University, Germany,* PhD, *SUNY Stony Brook*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Microbiology and Immunology

Andrea Sant, PhD, *Washington University*
Professor
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Kristen Scheible, MD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics, Neonatology
Joint Appointment(s): Microbiology and Immunology

Edward Schwarz, PhD, *Einstein College of Medicine*
Professor
Richard and Margaret Burton Distinguished Professor in Orthopaedics; Director, Center for Musculoskeletal Research
Primary Appointment(s): Orthopaedics
Joint Appointment(s): Pathology and Laboratory Medicine; Medicine–Allergy, Immunology, and Rheumatology; Biomedical Engineering; Microbiology and Immunology

Ruth Serra-Moreno, PhD, *University of Barcelona*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Meera Singh, PhD, *University of Pune*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Microbiology and Immunology

Yan Sun, PhD, *University of Illinois at Urbana-Champaign*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Toru Takimoto, DVM, PhD, *Hokkaido University*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Juilee Thakar, PhD, *University of Wurzburg*
Associate Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Biostatistics and Computational Biology, Biomedical Genetics

David Topham, PhD, *University of Vermont*
Professor
Director, Translational Immunology and Infectious Diseases Institute; Marie Curran Wilson and Joseph Chamberlain Wilson Professorship
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Andrew Varble, PhD, *Icahn School of Medicine at Mount Sinai*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Brian Ward, PhD, *University of Illinois at Urbana-Champaign*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Rachel Wozniak, MD, PhD, *Tufts University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Microbiology and Immunology, Center for Visual Science

Terry Wright, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics
Joint Appointment(s): Microbiology and Immunology

Felix Yarovinsky, MD, *Russian State Medical University*
Professor
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Yiping Zhu, PhD, *Institute of Biophysics, Chinese Academy of Sciences*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Admissions

Applying to Master's Programs

Students interested in the MS degree are encouraged to apply early in the calendar year for matriculation in the fall of the same year. (The program does not offer matriculation in the spring semester.) Applications are reviewed on a rolling basis beginning in March and are accepted until May 1. Typical applicants have a strong undergraduate background in the biological sciences, including molecular biology, and have demonstrated mastery of relevant courses. Applicants moving to the second stage of review will be contacted by the program director to set up a video interview.

Academics

Master's Degrees and Requirements

To be eligible for the MS degree, students must earn 30 credits consisting of coursework, MS thesis research, and dissertation work as outlined in the MS Student Handbook. Depending on interests, a student's coursework may be structured to follow one of three course tracks: microbiology, immunology, or virology. In conjunction with that decision, each student should choose a faculty advisor by October 15 of the first year.

Students may also choose from the two options for the MS degree: the laboratory research master's degree (Plan A) and the library research master's degree (Plan B). Under Plan A, the student registers for courses as dictated by the chosen track of study. MS research credit will vary each semester and include a summer in residence after the first year, devoted to full-time research. The second year consists of remaining coursework in the fall semester, after which the required 30 credit hours will be met. The spring semester is devoted fully to research and writing, with students registering for dissertation status. At least six credits (but no more than 12) must be earned for MS research. Credit and course requirements for Plan B are similar, except that research credits may not exceed six hours. The library research master's thesis should be oriented to a specific problem or question, with data and information obtained mainly from the literature. The decision to follow Plan B must be made in conjunction with the advisor before the second year starts.

In all cases, the student and advisor will compose an advisory committee according to graduate education and university guidelines. Students must meet with the advisory committee before the end of the second semester to discuss the proposed research and thesis plan, and at least one additional time before the defense. The dissertation must show independent work based in part on original material. It must present evidence that the candidate possesses the ability to plan the study over a prolonged period and to present the results of the study in a logical, clear, and scientific manner. The dissertation should include evidence that the student is thoroughly acquainted with the literature in the related field. Students write and then orally defend their thesis in the spring semester of the second year.

GRADUATE COURSE TITLES

IND 501. Ethics in Research
IND 431. Foundations in Modern Biology I
IND 432. Foundations in Modern Biology II
MBI 501. Microbiology and Immunology Student Seminar
MBI 495. MS Research
MBI 473. Immunology
MBI 573. Immunology Seminar
MBI 540. Advanced Topics in Immunology
MBI 580. Immunology Research in Progress
MBI 414. Microbial Pathogenesis
MBI 514. Microbial Pathogenesis Seminar
MBI 570. Advanced Topics in Microbiology
MBI 456. General Virology
MBI 588. Virology Research Seminar
MBI 589. Advanced Topics in Virology

Microbiology and Immunology(PhD)

Jacques Robert
Chair
Ruth Serra-Moreno
Program Director

Overview

The Microbiology and Immunology PhD program provides graduate students with skills, tools, and academic knowledge in the diverse disciplines of immunology, microbiology, and virology.

Mission Statement and Strategic Goals

The mission of the Microbiology and Immunology PhD program is to train the next generation of scientists in the research areas of cancer, bacteriology, autoimmune diseases, vaccine design, and virus pathogens. We also strive to allow students to develop highly effective interdisciplinary collaborations, resulting in cutting-edge thesis projects that will make them competitive in the job market.

https://www.urmc.rochester.edu/education/graduate/phd/immunology-.aspx

Graduate Faculty Information

Jennifer Anolik, MD, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine–Allergy, Immunology, and Rheumatology
Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Stephen Dewhurst, PhD, *University of Nebraska*
Professor
Albert and Phyllis Ritterson Professorship; Vice Dean for Research, SMD; Associate Vice President for Health Sciences Research-Office of Senior VP for Research (UR)
Primary Appointment(s): Microbiology and Immunology

Paul Dunman, PhD, *University of Medicine and Dentistry of New Jersey*
Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Ophthalmology

Michelle Dziejman, PhD, *University of Pennsylvania*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Scott Gerber, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Surgery
Joint Appointment(s): Cancer Center, Microbiology and Immunology, Radiation Oncology

Steve Georas, MD, *Brown University*
Professor
Walter & Carmina Mary Parkes Family Distinguished Professorship
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
Joint Appointment(s): Microbiology and Immunology

Steven Gill, PhD, *Kansas State University*
Professor
Primary Appointment(s): Microbiology and Immunology, Environmental Medicine

Stephen Hammes, MD, PhD, *Duke University*
Professor
Primary Appointment(s): Medicine—Endocrine/Metabolism
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine, Pharmacology and Physiology

Kirsi Järvinen-Seppo, MD, PhD, *University of Helsinki*
Professor
Founders' Distinguished Professorship of Pediatric Allergy
Primary Appointment(s): Pediatrics, Allergy/Immunology
Joint Appointment(s): Medicine—Allergy, Immunology, and Rheumatology; Microbiology and Immunology

Minsoo Kim, PhD, *The Ohio State University*
Professor
Dean's Professorship in Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology
Joint Appointment(s): Pharmacology and Physiology

Paige Lawrence, PhD, *Cornell University*
Professor
Wright Family Research Professorship
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Microbiology and Immunology

Allison Lopatkin, PhD, *Duke University*
Assistant Professor
Primary Appointment(s): Chemical Engineering
Joint Appointment(s): Microbiology and Immunology

Cynthia Monaco, MD, PhD, *University of Texas at Dallas*
Assistant Professor
Primary Appointment(s): Medicine
Joint Appointment(s): Microbiology and Immunology

Craig Morrell, DVM, PhD, *Tufts University*
Professor
Dean's Professorship–Medicine; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine
Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Timothy Mosmann, PhD, *University of British Columbia*
Professor
Director, Center for Vaccine Biology and Immunology; Michael and Angela Pichichero Director in the David H. Smith Center for Vaccine Biology and Immunology
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Joshua Munger, PhD, *University of Chicago*
Professor
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Microbiology and Immunology

Shawn Murphy, PhD, *Duke University*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Microbiology and Immunology

Gowrishankar Muthukrishnan, PhD, *University of Central Florida*
Assistant Professor
Primary Appointment(s): Orthopaedics, Center for Musculoskeletal Research
Joint Appointment(s): Microbiology and Immunology

Jennifer Nayak, MD, *University at Buffalo*
Associate Professor
Primary Appointment(s): Pediatrics, Infectious Diseases
Joint Appointment(s): Microbiology and Immunology

Martin Pavelka, PhD, *University of Rochester*
Professor
Primary Appointment(s): Microbiology and Immunology

Jacques Robert, PhD, *University of Geneva*
Professor
Chair, Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Environmental Medicine

Marlies Rossmann, MD, *Free University and Humboldt University, Germany,* PhD, *SUNY Stony Brook*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Microbiology and Immunology

Andrea Sant, PhD, *Washington University*
Professor
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Kristen Scheible, MD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics, Neonatology
Joint Appointment(s): Microbiology and Immunology

Edward Schwarz, PhD, *Einstein College of Medicine*
Professor
Richard and Margaret Burton Distinguished Professor in Orthopaedics; Director, Center for Musculoskeletal Research
Primary Appointment(s): Orthopaedics
Joint Appointment(s): Pathology and Laboratory Medicine; Medicine–Allergy, Immunology, and Rheumatology; Biomedical Engineering; Microbiology and Immunology

Ruth Serra-Moreno, PhD, *University of Barcelona*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Meera Singh, PhD, *University of Pune*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Microbiology and Immunology

Yan Sun, PhD, *University of Illinois at Urbana-Champaign*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Toru Takimoto, DVM, PhD, *Hokkaido University*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Juilee Thakar, PhD, *University of Wurzburg*
Associate Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Biostatistics and Computational Biology, Biomedical Genetics

David Topham, PhD, *University of Vermont*
Professor
Director, Translational Immunology and Infectious Diseases Institute; Marie Curran Wilson and Joseph Chamberlain Wilson Professorship
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Andrew Varble, PhD, *Icahn School of Medicine at Mount Sinai*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Brian Ward, PhD, *University of Illinois at Urbana-Champaign*
Associate Professor
Primary Appointment(s): Microbiology and Immunology

Rachel Wozniak, MD, PhD, *Tufts University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Microbiology and Immunology, Center for Visual Science

Terry Wright, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics
Joint Appointment(s): Microbiology and Immunology

Felix Yarovinsky, MD, *Russian State Medical University*
Professor
Primary Appointment(s): Microbiology and Immunology in the Center for Vaccine Biology and Immunology

Yiping Zhu, PhD, *Institute of Biophysics, Chinese Academy of Sciences*
Assistant Professor
Primary Appointment(s): Microbiology and Immunology

Admissions

Applying to Doctoral Programs

Applicants for admission to graduate study in the microbiology and immunology program should have an undergraduate major in biological or physical sciences. The usual minimum requirements are general biology, general chemistry, analytical chemistry, organic chemistry, and at least one year of mathematics and physics. Physical chemistry and biochemistry are desirable. The major goal of the PhD graduate program is to prepare students for a scientific career in one of several areas included in the broad categories of virology, microbiology, and immunology. In the PhD program, selected students receive intensive, advanced training in the allied fields of immunology, microbiology, virology, and biotechnology, with a focus on hands-on research and real-world skills, including critical scientific thinking, scientific communication, group dynamics, problem-solving, data analysis, and instruction in drug discovery. The goals are to reflect the interconnectivity and complexity of biomedical sciences as well as the increasing requirement for teamwork in problem-solving in the workforce.

Academics

Doctoral Degrees and Requirements

The program awards a doctorate of philosophy in microbiology and immunology. The graduate curriculum consists of required core courses, elective courses, and seminars. Students choose to specialize in one of the three major tracks—immunology, microbiology, and virology—and fulfill the course requirements of the selected track. Students may also choose to enroll in concentrations in cancer biology and/or in bioinformatics. Each concentration has a set of required courses and seminar participation. Students interested in either of these concentrations are encouraged to take the required courses/seminars after completing their qualifying exam.

A major component of the graduate curriculum is experimental research. In fact, the PhD degree is awarded only after a student has conducted an independent research project and successfully written and defended a dissertation that demonstrates a high level of research skills, intellectual proficiency, originality, and critical thinking. Students are expected to publish their thesis work in peer-reviewed journals by the time of their defense.

As part of their PhD training, students must (i) serve as teaching assistants at least one semester, (ii) develop an individual career development plan, and (iii) are highly encouraged to present their work at professional conferences.

GRADUATE COURSE TITLES

IND 501. Ethics in Research
IND 431. Foundations in Modern Biology I
IND 432. Foundations in Modern Biology II
MBI 501. Microbiology and Immunology Student Seminar
MBI 507. Laboratory Rotations
MBI 519. Experimental Design and Analysis
MBI 473. Immunology
MBI 573. Immunology Seminar
MBI 515. Advanced Immunology
MBI 414. Microbial Pathogenesis
MBI 514. Pathogenesis Seminar
MBI 421. Microbial Genetics and Physiology
MBI 521. Microbial Genetics and Physiology Seminar
MBI 456. Virology
MBI 473. Immunology
MBI 573. Immunology Seminar
MBI 414. Microbial Pathogenesis
MBI 514. Pathogenesis Seminar

Concentrations

Students interested in these concentrations should consult first with the IMV program director. For the bioinformatics concentration, students are also strongly encouraged to first discuss with Dr. Juilee Thakar. For the Cancer Biology concentration, they should discuss with Dr. Brian Altman.

Bioinformatics concentration

Students interested in pursuing the bioinformatics concentration (MIN) should take the following courses year 2 onwards:

Choose one of the following:
BCH 521. Bioinformatics for Life Scientists (Fall, 4 credits)
IND 419. Introduction to quantitative biology (Spring, 3 credits)
BIO 457. Applied genomics (4 credits)
IND 484. Current topics in Bioinformatics Research (Fall and Spring, 2 semesters, 1 credit per semester)

Choose one of the following:
DSC 462. Computational Introduction to Statistics (4 credits)
BST 467. Applied Statistics in the Biomedical Sciences (3 credits)
BST 434. Genomic Data Analyses (4 credits)

Cancer Biology concentration

Year 2: students interested in pursuing the Cancer Biology concentration should take the following courses on or beyond year 2:
PTH 507. Molecular and Cellular Biology of Cancer (3 credits)
IND 517. Clinical and Translational Oncology (2 credits, offered in Spring on even-numbered years)
IND 507. Cancer Biology Seminar (4 credits, 1 per semester)

Neurobiology and Anatomy

John J. Foxe
Kilian J. and Caroline F. Schmitt Chair in Neuroscience

M. Kerry O'Banion
Neuroscience Vice-Chair

J. Chris Holt
Neuroscience Graduate Program Director

Madalina Tivarus
Neuroscience Graduate Program Associate Director and Admissions Director

Pam LaDuke
Neuroscience Graduate Program Administrator

Overview

The Department of Neuroscience is recognized for its excellence in research programs and for its commitment to teaching and leadership in both graduate and medical education. In addition to our own neuroscience graduate program, commitments include extensive instructional and leadership roles in the graduate programs of brain and cognitive sciences, biomedical engineering, and others. Connections among different levels of clinical education and graduate education are also strong. Over 90 faculty (primary, joint, and adjunct) are actively engaged in research on the structure and function of the nervous system across several levels of inquiry. Areas of interest cover a broad spectrum of neuroscience, including sensory, motor and integrative systems, cell signaling and transmission, development and aging, neurobiology of disease, learning and plasticity, neuroengineering, and computational neurobiology. Extensive state-of-the-art instrumentation and methodologies are available for investigators, students, and staff, both within labs and across a set of departmental research cores. Close interactions among departments and centers sharing interests in neuroscience ensure that this discipline holds a leading presence throughout our unified medical and college campus, while the Department of Neuroscience remains central to Rochester's research and teaching programs in the neural sciences. For students as well as fellows and visiting faculty, this translates into a highly attractive environment for training and career development. An enduring departmental role continues to be its commitment to education. This commitment includes extensive participatory and leadership roles in medical, graduate, and undergraduate curricula at the University of Rochester.

About the Program

The neurobiology and anatomy track is particularly well-suited to students in the joint MD/PhD program and to PhD candidates interested in studying the function and dysfunction of the nervous system on a broader scale. The program of study extends the core curriculum into human anatomy, neurobiology, and disorders of the nervous system through participation in one of two medical school courses. The program specifically prepares students for academic careers within a medical school setting, where teaching is an important component of the faculty

mission, and where research interests include systems, integrative, and translational/clinical aspects of neural science. The track is available to students whose thesis advisor has a primary or secondary appointment in the Department of Neuroscience. Students completing the track are awarded a PhD in neurobiology and anatomy.

Mission Statement and Strategic Goals

The Department of Neuroscience provides our students with research training, professional mentorship, and career guidance in a diverse, equitable, and inclusive environment that will prepare them to advance ever better neuroscience research through scholarship, instruction, and community service.

https://www.urmc.rochester.edu/education/graduate/phd/neurosciences.aspx

Graduate Faculty Information

Eric Anson, PhD, *University of Maryland*
Assistant Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Tanzil Arefin, PhD, *University of Freiburg and University of Strasbourg*
Assistant Professor
Primary Appointment(s): Neuroscience

Loisa Bennetto, PhD, *University of Denver*
Associate Professor
Primary Appointment(s): Psychology
Joint Appointment(s): Brain and Cognitive Sciences, Neuroscience

Jean Bidlack, PhD, *University of Rochester*
Professor
Associate Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Edward Brown, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Biomedical Engineering and Neuroscience

Ania Busza, MD, *University of Massachusetts*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neurosurgery, Neuroscience, and Physical Medicine and Rehabilitation

Laurel Carney, PhD, *University of Wisconsin–Madison*
Professor
Primary Appointment(s): Biomedical Engineering and Neuroscience

Deborah Cory-Slechta, PhD, *University of Minnesota – Minneapolis*
Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience, Public Health Sciences

Benjamin Crane, MD, *University of California, Los Angeles*
Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Greg DeAngelis, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Biomedical Engineering, Center for Visual Science, Neuroscience

Stephen Dewhurst, PhD, *University of Nebraska*
Professor
Albert and Phyllis Ritterson Professorship; Vice Dean for Research, SMD; Vice President for Research UR
Primary Appointment(s): Microbiology and Immunology

Ian Dickerson, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

Robert Dirksen, PhD, *University of Rochester*
Professor
Lewis Pratt Ross Professorship of Pharmacology and Physiology; Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

David Dodell-Feder, PhD, *Harvard University*
Assistant Professor
Primary Appointment(s): Psychology
Joint Appointment(s): Neuroscience

Ting Du, MD/PhD, *China Medical University*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Center for Translational Neuromedicine

Ian Fiebelkorn, PhD, *City University of New York*
Assistant Professor
Primary Appointment(s): Neuroscience

Manoela V. Fogaca, PhD, *University of Sao Paulo*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology

John J. Foxe, PhD, *Albert Einstein College of Medicine*
Professor
Kilian J. and Caroline F. Schmitt Chair in Neuroscience; Research Director, The Ernest J. Del Monte Institute for Neuroscience
Primary Appointment(s): Neuroscience
Joint Appointment(s): Psychiatry, Center for Visual Science

Edward Freedman, PhD, *University of Pennsylvania*
Associate Professor
Primary Appointment(s): Neuroscience

Dragony Fu, PhD, *University of California, Berkeley*
Associate Professor
Primary Appointment(s): Biology

Julie Fudge, MD, *Yeshiva University Albert Einstein College of Medicine*
Professor
Primary Appointment(s): Neuroscience

Archan Ganguly, PhD, *Ohio University*
Assistant Professor
Primary Appointment(s): Neuroscience

Paul Geha, MD, *American University of Beirut*
Assistant Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neurology, Neuroscience

Harris Gelbard, MD, *Northwestern University*
Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Pediatrics, Neuroscience, Microbiology and Immunology

Sina Ghaemmaghami, PhD, *Duke University*
Professor
George Y. and Catherine H. Wu Professor in Chemistry
Primary Appointment(s): Biology
Joint Appointment(s): Chemistry

Steven A. Goldman, MD, *Cornell University;* PhD, *Rockefeller University*
Professor
Dean Zutes Chair in Biology of the Aging Brain; URMC Distinguished Professor in Neurosciences; Co-Director, Neurology, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Manuel Gomez-Ramirez, PhD, *City University of New York*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Science
Joint Appointment(s): Neuroscience

Vera Gorbunova, PhD, *Weismann Institute of Science*
Professor
Doris Johns Cherry Professor
Primary Appointment(s): Biology
Joint Appointment(s): Medicine, Geriatrics/Aging

James Gugger, MD, PharmD*, SUNY Downstate Health Sciences University*
Rank: Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Suzanne Haber, PhD, *Stanford University*
Professor
Dean's Professorship in Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience, Psychiatry

Lauren Hablitz, PhD, *University of Alabama at Birmingham*
Assistant Professor
Primary Appointment(s): Neurology

Ralf Haefner, PhD, *Oxford University*
Associate Professor
Primary Appointment(s): Brain and Cognitive Science

Jennetta Hammond, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Kenneth Henry, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Biomedical Engineering, Neuroscience

Angela Hewitt, MD/PhD, *University of Minnesota*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience, Pediatrics

J. Christopher Holt, PhD, *Tulane University*
Associate Professor
Program Director, Neuroscience Graduate Program
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Krystel Huxlin, PhD, *University of Sydney*
Professor
James V. Aquavella, MD Professorship in Ophthalmology; Director of Research, Ophthalmology
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Center for Visual Science; Institute for Optics; Brain and Cognitive Sciences, Neuroscience

Coraline Rinn Iordan, PhD, *Stanford University*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Science
Joint Appointment(s): Neuroscience

Michelle Janelsins-Benton, PhD, MPH, *University of Rochester*
Professor
Primary Appointment(s): Department of Surgery
Joint Appointment(s): Neuroscience, Cancer Center

Gail V. W. Johnson, PhD, *University of Rochester*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Todd A. Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics

Paul J. Kammermeier, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Brian Keane, PhD, *University of California, Los Angeles*
Assistant Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neuroscience, Center for Visual Science

Amy Kiernan, PhD, *Boston College*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics

Edmund Lalor, PhD, *University College Dublin*
Associate Professor
Primary Appointment(s): Biomedical Engineering, Neuroscience

Richard T. Libby, PhD, *Boston College*
Professor
Senior Associate Dean, Graduate Education and Postdoctoral Affairs
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Pathology and Laboratory Medicine, Biomedical Genetics

Anne Luebke, PhD, *Johns Hopkins University*
Associate Professor
Primary Appointment(s): Biomedical Engineering, Neuroscience

David MacLean, PhD, *McGill University*
Associate Professor
Paul Sark Professorship in Pharmacology
Primary Appointment(s): Pharmacology and Physiology

Ania Majewska, PhD, *Columbia University*
Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science

Margot Mayer-Pröschel, PhD, *University of Wurzburg*
Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Juliette McGregor, PhD, *University of Cambridge*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Center for Visual Science

James McGrath, PhD, *Harvard-MIT*
Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Neuroscience

Julian Meeks, PhD, *Washington University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pediatrics

William Merigan, PhD, *University of Maryland*
Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Center for Visual Science, Brain and Cognitive Sciences

Jude Mitchell, PhD, *University of California, San Diego*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences

Jong-Hoon Nam, PhD, *Virginia Tech*
Associate Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Mechanical Engineering

Maiken Nedergaard, MD, DMSc, *University of Copenhagen*
Professor
Co-Director, Neurology, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience; Neurosurgery

Keith Nehrke, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine, Nephrology
Joint Appointment(s): Pharmacology and Physiology

Shawn D. Newlands, MD, PhD, *University of Texas*
Professor
Chair, Otolaryngology
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Mark Noble, PhD, *Stanford University*
Professor
Martha M. Freeman, MD Professorship in Biomedical Genetics
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Samuel Norman-Haignere, PhD, *Massachusetts Institute of Technology*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology, Neuroscience
Joint Appointment(s): Biomedical Engineering

M. Kerry O'Banion, MD, PhD, *University of Illinois*
Professor
Vice Chair, Neuroscience
Primary Appointment(s): Neuroscience

Thomas O'Connor, PhD, *University of Virginia*
Professor
Wynne Distinguished Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neuroscience, Obstetrics and Gynecology

John Olschowka, PhD, *University of California, Davis*
Professor
Primary Appointment(s): Neuroscience

Krishnan Padmanabhan, PhD, *Carnegie Mellon University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science

Sara Patterson, PhD, *University of Washington*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience, Flaum Eye Institute

Elise Piazza, PhD, *University of California, Berkeley*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience

Martina Poletti, PhD, *Boston University*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience; Center for Visual Science

Douglas Portman, PhD, *University of Pennsylvania*
Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience, Biology

Christoph Pröschel, PhD, *Oxford University*
Professor
Primary Appointment(s): Biomedical Genetics

Lizabeth Romanski, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Biomedical Engineering

Michele Rucci, PhD, *Scuola Superiore Sant'Anna*
Professor
Primary Appointment(s): Brain and Cognitive Science
Joint Appointment(s): Neuroscience

Souvarish Sarkar, PhD, *Iowa State University*
Assistant Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience

Jesse Schallek, PhD, *SUNY Upstate Medical University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience

Giovanni Schifitto, MD, *Universita Degli Studi di Milano*
Professor
Esther Aresty Granite Professor in Neurology
Primary Appointment(s): Neurology
Joint Appointment(s): Electrical and Computer Engineering, Imaging Science

Scott Seidman, PhD, *Case Western Reserve University*
Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Neuroscience, Center for Visual Science

Ruchira Singh, PhD, *Kansas State University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics

Nathan A. Smith, PhD, *University of Rochester*
Associate Professor
Associate Dean for Equity and Inclusion in Research and Research Education
Primary Appointment(s): Neuroscience

Adam Snyder, PhD, *The City University of New York*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences, Neuroscience

Marissa Sobolewski-Terry, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Environmental Medicine

Gabriella Sterne, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Benjamin Suarez-Jimenez, PhD, *University College–London*
Assistant Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science

Duje Tadin, PhD, *Vanderbilt University*
Professor
Chair, Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Ophthalmology, Neuroscience, Center for Visual Science

Charles Thornton, MD, *University of Iowa*
Professor
Saunders Family Distinguished Professor in Neuromuscular Research
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Madalina Tivarus, PhD, *The Ohio State University*
Associate Professor
Primary Appointment(s): Imaging Sciences, Neuroscience

Kuan Hong Wang, PhD, *University of California, San Francisco*
Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

Patricia White, PhD, *California Institute of Technology*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Otolaryngology

David Williams, PhD, *University of California, San Diego*
Professor
William G. Allyn Chair of Medical Optics
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Brain and Cognitive Sciences, Biomedical Engineering

Andrew P. Wojtovich, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Houhui (Hugh) Xia, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Admissions

Applying to Doctoral Programs

Students entering the program typically have a baccalaureate degree in one of the natural or applied sciences (such as biological sciences, chemistry, physics, neuroscience, psychology, biomedical engineering). Successful applicants usually have had college-level coursework, or equivalent professional experience, in disciplines relevant for neuroscience, including the biological sciences, chemistry, physics, and mathematics. In addition, prior laboratory research experience is strongly recommended.

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Students are admitted to the PhD program as a whole rather than a specific laboratory. Full-time study is required.

We expect all application materials (except official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and test scores, and to require submission of official documentation at any point in the admissions review process.

Required Materials

- SMD graduate admissions application
- Statement of purpose
- Transcript(s)
- Three letters of recommendation
- GRE scores will not be used by the admissions committee even if submitted. Note: Because we share our admissions system with other programs, we are unable to remove the field that requests GRE information. Applicants can disregard this field. If GRE scores are submitted, the committee will not look at it or take it into account when making admissions decisions.
- For applicants whose native language is not English, official TOEFL (SMD school code: 2948, SOPHAS application code: 5688) or IELTS score
- Research papers, publications and other original works (optional)
- CV/resume (optional)

Please do not include secondary school documentation or financial documentation. These are not used during the admissions process.

Evaluation of Applications by the Admissions Committee

Our admissions evaluation process follows three core tenets, using specific metrics to define excellence in each area:

1. Likelihood that the applicant can successfully complete the academic requirements to obtain a PhD from the NGP

- Cumulative GPA and grades in STEM courses
- Research and other work experiences
- Writing skills
- Reference feedback

2. Programmatic match with individual's professional goals
   - Relevance of coursework
   - Alignment of research interests and experience
   - Stated commitment to research
   - Reference feedback
3. Potential to contribute to institutional core values (provide link to iCare values)
   - Leadership
   - Reliability/dependability
   - Teamwork and service
   - Commitment to diversity, equity, and inclusion

These are the core assessment areas but our evaluations extend to other critical factors, including but not limited to considerations that cross categories: resilience, recovery from setbacks, effective adaptation to changing/stressful environments and situations.

Highlights About our Admissions Process

- There is no GRE score requirement
- There is no "triage" line for consideration
- Every application received before the deadline is read by faculty on the admissions committee
- The admissions committee has both faculty and student members
- Consistent evaluation rubrics (scores based on core tenets) are used for all applicants.

Selected applicants will interview with at least three program faculty members whose further evaluation will be considered before any admissions offer is recommended.

Academics

Master's Degrees and Requirements

In pursuit of the PhD, students can earn a master's degree *en passant*. The master's degree is awarded after satisfactory completion of the Part I and Part II qualifying exams and a minimum of 30 credits hours of study in:

- Cellular Neuroscience
- Integrative and Systems Neuroscience
- Ethics in Research
- Human Brain Anatomy
- Introduction to Programming
- Three to four laboratory rotations
- Four semesters of Journal Club
- Applied Statistics in the Biomedical Sciences
- Teaching assistant for one semester
- NSC Student Seminar
- Dissertation research
- Ten elective credits including Neuroinflammation, Biology of Neurological Disease, and/or a host of interdepartmental courses offered by Brain and Cognitive Sciences, Center for Visual Science, Biomedical Engineering, and Biostatistics and Computational Biology, to name a few.

Part I Exam

The student in consultation with their advisor selects a minimum of 50 papers to read that are relevant to the student's scientific area of interest. Based on the readings, the student formulates five broad hypothesis-driven research questions at the end of the reading period. With the committee's approval, the student composes written answers to these questions.

Part II Thesis Proposal/Qualifying Exam

After passing the Part I exam, the student is expected to formulate a thesis proposal with the guidance of their thesis advisor. The written proposal includes the specific aims and overall significance of the proposed research, sufficient background for others to understand the research plan, key preliminary data that support the aims, and a description of the experimental design that will be used to accomplish the stated aims. Successful completion of the thesis proposal/qualifying exam advances the student to candidacy for the PhD degree.

Doctoral Degrees and Requirements

The neurobiology and anatomy degree provides a comprehensive, research-intensive training experience for students seeking a PhD degree in the study of the nervous system. The first-year curriculum provides students with a thorough understanding of the fundamental concepts that underlie contemporary neuroscience, from the molecular and cellular to systems levels. Active learning is fostered through participation in the Neuroscience Journal Club, Student Seminar, and laboratory rotations with faculty selected by the student. During the first year, students engage in a rigorous curriculum in cellular and systems neuroscience that builds a solid foundation for subsequent, more specialized coursework tailored to the individual career and research interests of each student. In addition, first-year students complete three laboratory rotations that, through active participation in a research project, provide an insider's view of the research interests, laboratory environment, and mentoring style of potential thesis advisors. At the end of the first year, students choose a thesis advisor and begin developing and carrying out their dissertation research. Training in subsequent years occurs largely through active participation in laboratory research, journal clubs, seminars, and continuous participation in local, national, and international scientific meetings. Students are awarded the PhD degree upon successful defense of scholarly research described in a publishable dissertation.

The departmentally based degree in neurobiology and anatomy is particularly well suited to students in the University's MD/PhD program and to PhD candidates interested in the

characteristics of, and mechanisms underlying, function and dysfunction of the nervous system. Mentors for this degree are primary/secondary faculty in the Department of Neuroscience. The program prepares students specifically for academic careers within a medical school setting, where teaching in medical and graduate school curricula is a strong component of faculty mission, and where research interests include systems, integrative, and translational/clinical attributes of neural science.

To those choosing the neurobiology and anatomy PhD track, a rare opportunity is offered. Students choose one of the two medical school courses associated with the department, depending on their interest: Human Structure and Function includes gross anatomy, yielding an appreciation of the peripheral nervous system and its diverse interactions with numerous functions of the body; and, Mind, Brain, and Behavior approaches neuroscience from a distinctly human perspective with emphasis on clinical implications and mechanisms.

As students approach their extended research training, they choose additional electives for a specialized emphasis. Graduate students in neurobiology and anatomy are encouraged to exploit the multidisciplinary talents of our faculty in basic and clinical disciplines to achieve the research goals of their dissertation projects. Numerous collaborative research programs offer opportunities with colleagues in associated departments.

Teaching requirements and opportunities are prominent in the program. The aim is to instill the confidence necessary to impart knowledge to others and to prepare students for their eventual roles as teaching researchers.

Considerations for MSTP Students in the MD/PhD Program
Students admitted to the MD/PhD program proceed with the same course of study as other students in the PhD program, except they often begin their lab rotations in the summer before they join the program to choose a lab and research advisor. MD/PhD students can also transfer up to 10 credit hours from medical school courses and are not required to register for NSC 511 and NSC 581.

GRADUATE COURSE TITLES

ANA 512. Cellular Neuroscience
ANA 513. Neuroinflammation
ANA 518. Introduction to Neuroengineering
ANA 522. Neuroscience Student Seminar
ANA 525. Mind, Brain, and Behavior
ANA 526. Human Structure and Function
ANA 581. Teaching Tutorial in Neuroscience
ANA 591. PhD Readings/Special Topics
ANA 595. PhD Research in Neuroscience
BCSC 501. Language
BCSC 502. Cognition
BCSC 508. Cognitive Neuroscience
BCSC 511. Behavioral Methods in Cognitive Science
BCSC 512. Computational Methods in Cognitive Science
BCSC 513. Introduction to fMRI: Imaging, Computational Analysis and Neural Representations
BCSC 532. Probabilistic Theories of Cognitive Processing
BCSC 543. Neurochemical Foundations of Behavior
BCSC 546. Biology of Mental Disorders
BCSC 547A. Advanced Computational Neuroscience
BME 416. Speech on the Brain
BME 472. Advanced Biomedical Microscopy
BST 463. Introduction to Biostatistics
BST 465. Design of Clinical Trials
BST 467. Applied Statistics in the Biomedical Sciences
ECE 440. Introduction to Random Processes
GEN 503. Genetics Seminar
GEN 506. Principles in Stem Cell Biology
GEN 507. Advanced Genetics and Genomics
GEN 508. Genes, Development, and Disease
IND 409. Cell Biology
IND 417. Workshop in Scientific Communications
IND 418. Biostatistics Boot Camp
IND 420. Mastering Scientific Information
IND 431. Foundations Modern Biology I
IND 439. Leadership and Management for Scientists
IND 447. Signal Transduction
IND 501. Ethics and Professional Integrity
IND 511. URBest Internship
LING 425. Introduction to Semantic Analysis
LING 428. Lexical Semantics
MBI 589. Virology Seminar
MBI 473. Immunology
MBI 515. Advanced Immunology
NSC 410. Introduction to Programming
NSC 420. Biostatistics and Experimental Design Boot Camp
NSC 503. Neuroscience Student Seminar
NSC 511. Human Brain Anatomy
NSC 512. Cellular Neuroscience
NSC 525. Biology of Neurological Disease
NSC 531. Integrative and Systems Neuroscience
NSC 541. Neurons, Circuits, Systems
NSC 547. Introduction to Data Analysis Methods in Neuroscience
NSC 581. Teaching Tutorial in Neuroscience
NSC 590. Lab Rotations in Neuroscience
NSC 591. PhD Readings/Special Topics
NSC 592. Neuroscience Journal Club
NSC 595. Neuroscience PhD Research
PHP 404. Principles of Pharmacology
PHP 405. Effective Scientific Communication
PHP 447. Signal Transduction
PHP 467. Statistical Rigor and Data Analysis
PM 419. Recruitment and Retention
PM 488. Experimental Therapeutics
PTH 507. Cancer Biology
PTH 509. Pathways of Human Disease
PTH 571. Molecular Basis of Disease
TOX 521. Toxicology I
TOX 522. Toxicology II
TOX 560. Societal Determinants of Neurotoxicity

Neuroscience

John J. Foxe
Kilian J. and Caroline F. Schmitt Chair in Neuroscience

M. Kerry O'Banion
Neuroscience Vice-Chair

J. Chris Holt
Neuroscience Graduate Program Director

Madalina Tivarus
Neuroscience Graduate Program Associate Director and Admissions Director

Pam LaDuke
Neuroscience Graduate Program Administrator

Overview

The Department of Neuroscience is recognized for its excellence in research programs and for its commitment to teaching and leadership in both graduate and medical education. In addition to our own neuroscience graduate program, commitments include extensive instructional and leadership roles in the graduate programs of brain and cognitive sciences, biomedical engineering, and others. Connections among different levels of clinical education and graduate education are also strong. Over 90 faculty (primary, joint, and adjunct) are actively engaged in research on the structure and function of the nervous system across several levels of inquiry. Areas of interest cover a broad spectrum of neuroscience, including sensory, motor and integrative systems, cell signaling and transmission, development and aging, neurobiology of disease, learning and plasticity, neuro-engineering, and computational neurobiology. Extensive state-of-the-art instrumentation and methodologies are available for investigators, students, and staff, both within labs and across a set of departmental research cores. Close interactions among departments and centers sharing interests in neuroscience ensure that this discipline holds a leading presence throughout our unified medical and college campus, while the Department of Neuroscience remains central to Rochester's research and teaching programs in the neural sciences. For students as well as fellows and visiting faculty, this translates into a highly attractive environment for training and career development. An enduring departmental role continues to be its commitment to education. This commitment includes extensive participatory and leadership roles in medical, graduate, and undergraduate curricula at the University of Rochester.

About the Program

The neuroscience track attracts students from diverse backgrounds in the biological and physical sciences, psychology, and engineering. The hallmark of the track is its flexibility, allowing students to design a curriculum that will augment their unique research experience or broaden their perspective of neuroscience. Starting in the first year, students personalize their training with advanced coursework chosen from a rich variety of electives offered in the School of Medicine and Dentistry or the School of Arts, Sciences, and Engineering. In addition, students frequently collaborate with faculty to design their own interest-specific tutorials. Students in the neuroscience track may select a thesis advisor from more than 90 faculty representing nearly 30 departments and six interdisciplinary research centers. Successful completion of the track culminates in a PhD in neuroscience.

Mission Statement and Strategic Goals

The Neuroscience Department provides our students with research training, professional mentorship, and career guidance in a diverse, equitable, and inclusive environment that will prepare them to advance ever better neuroscience research through scholarship, instruction, and community service.

https://www.urmc.rochester.edu/education/graduate/phd/neurosciences.aspx

Graduate Faculty Information

Eric Anson, PhD, *University of Maryland*
Assistant Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Tanzil Arefin, PhD, *University of Freiburg and University of Strasbourg*
Assistant Professor
Primary Appointment(s): Neuroscience

Loisa Bennetto, PhD, *University of Denver*
Associate Professor
Primary Appointment(s): Psychology
Joint Appointment(s): Brain and Cognitive Sciences, Neuroscience

Jean Bidlack, PhD, *University of Rochester*
Professor
Associate Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Edward Brown, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Biomedical Engineering and Neuroscience

Ania Busza, MD, *University of Massachusetts*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neurosurgery, Neuroscience, and Physical Medicine and Rehabilitation

Laurel Carney, PhD, *University of Wisconsin–Madison*
Professor
Primary Appointment(s): Biomedical Engineering and Neuroscience

Deborah Cory-Slechta, PhD, *University of Minnesota–Minneapolis*
Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience, Public Health Sciences

Benjamin Crane, MD, *University of California, Los Angeles*
Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Greg DeAngelis, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Biomedical Engineering, Center for Visual Science, Neuroscience

Stephen Dewhurst, PhD, *University of Nebraska*
Professor
Albert and Phyllis Ritterson Professorship; Vice Dean for Research, SMD; Vice President for Research, University of Rochester
Primary Appointment(s): Microbiology and Immunology

Ian Dickerson, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

Robert Dirksen, PhD, *University of Rochester*
Professor
Lewis Pratt Ross Professorship of Pharmacology and Physiology; Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

David Dodell-Feder, PhD, *Harvard University*
Assistant Professor
Primary Appointment(s): Psychology
Joint Appointment(s): Neuroscience

Ting Du, MD/PhD, *China Medical University*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Center for Translational Neuromedicine

Ian Fiebelkorn, PhD, *City University of New York*
Assistant Professor
Primary Appointment(s): Neuroscience

Manoela V. Fogaca, PhD, *University of Sao Paulo*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology

John J. Foxe, PhD, *Albert Einstein College of Medicine*
Professor
Kilian J. and Caroline F. Schmitt Chair in Neuroscience; Research Director, The Ernest J. Del Monte Institute for Neuroscience
Primary Appointment(s): Neuroscience
Joint Appointment(s): Psychiatry, Center for Visual Science

Edward Freedman, PhD, *University of Pennsylvania*
Associate Professor
Primary Appointment(s): Neuroscience

Dragony Fu, PhD, *University of California, Berkeley*
Associate Professor
Primary Appointment(s): Biology

Julie Fudge, MD, *Yeshiva University Albert Einstein College of Medicine*
Professor
Primary Appointment(s): Neuroscience

Archan Ganguly, PhD, *Ohio University*
Assistant Professor
Primary Appointment(s): Neuroscience

Paul Geha, MD, *American University of Beirut*
Assistant Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neurology, Neuroscience

Harris Gelbard, MD, *Northwestern University*
Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Pediatrics, Neuroscience, Microbiology and Immunology

Sina Ghaemmaghami, PhD, *Duke University*
Professor
George Y. and Catherine H. Wu Professor in Chemistry
Primary Appointment(s): Biology
Joint Appointment(s): Chemistry

Steven A. Goldman, MD, *Cornell University;* PhD, *Rockefeller University*
Professor
Dean Zutes Chair in Biology of the Aging Brain; URMC Distinguished Professor in Neurosciences; Co-Director, Neurology, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Manuel Gomez-Ramirez, PhD, *City University of New York*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Science
Joint Appointment(s): Neuroscience

Vera Gorbunova, PhD, *Weismann Institute of Science*
Professor
Doris Johns Cherry Professor
Primary Appointment(s): Biology
Joint Appointment(s): Medicine, Geriatrics/Aging

James Gugger, *MD, PharmD, SUNY Downstate Health Sciences University*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Suzanne Haber, PhD, *Stanford University*
Professor
Dean's Professorship in Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience, Psychiatry

Lauren Hablitz, PhD, *University of Alabama at Birmingham*
Assistant Professor
Primary Appointment(s): Neurology

Ralf Haefner, PhD, *Oxford University*
Associate Professor
Primary Appointment(s): Brain and Cognitive Science

Jennetta Hammond, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Kenneth Henry, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Biomedical Engineering, Neuroscience

Angela Hewitt, MD/PhD, *University of Minnesota*
Assistant Professor
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience, Pediatrics

J. Christopher Holt, PhD, *Tulane University*
Associate Professor
Program Director, Neuroscience Graduate Program
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Krystel Huxlin, PhD, *University of Sydney*
Professor
James V. Aquavella, MD Professorship in Ophthalmology; Director of Research, Ophthalmology
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Center for Visual Science; Institute for Optics; Brain and Cognitive Sciences, Neuroscience

Coraline Rinn Iordan, PhD, *Stanford University*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Science
Joint Appointment(s): Neuroscience

Michelle Janelsins-Benton, PhD, MPH, *University of Rochester*
Professor
Primary Appointment(s): Department of Surgery
Joint Appointment(s): Neuroscience, Cancef Center

Gail V. W. Johnson, PhD, *University of Rochester*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Todd A. Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics

Paul J. Kammermeier, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Brian Keane, PhD, *University of California, Los Angeles*
Assistant Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neuroscience, Center for Visual Science

Amy Kiernan, PhD, *Boston College*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics

Edmund Lalor, PhD, *University College Dublin*
Associate Professor
Primary Appointment(s): Biomedical Engineering, Neuroscience

Richard T. Libby, PhD, *Boston College*
Professor
Senior Associate Dean, Graduate Education and Postdoctoral Affairs
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Pathology and Laboratory Medicine, Biomedical Genetics

Anne Luebke, PhD, *Johns Hopkins University*
Associate Professor
Primary Appointment(s): Biomedical Engineering, Neuroscience

David MacLean, PhD, *McGill University*
Associate Professor
Paul Sark Professorship in Pharmacology
Primary Appointment(s): Pharmacology and Physiology

Ania Majewska, PhD, *Columbia University*
Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science

Margot Mayer-Pröschel, PhD, *University of Wurzburg*
Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

James McGrath, PhD, *Harvard-MIT*
Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Neuroscience

Juliette McGregor, PhD, *University of Cambridge*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Center for Visual Science

Julian Meeks, PhD, *Washington University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pediatrics

William Merigan, PhD, *University of Maryland*
Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Center for Visual Science, Brain and Cognitive Sciences

Jude Mitchell, PhD, *University of California, San Diego*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences

Jong-Hoon Nam, PhD, *Virginia Tech*
Associate Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Mechanical Engineering

Maiken Nedergaard, MD, DMSc, *University of Copenhagen*
Professor
Co-Director, Neurology, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience; Neurosurgery

Keith Nehrke, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine, Nephrology
Joint Appointment(s): Pharmacology and Physiology

Shawn D. Newlands, MD, PhD, *University of Texas*
Professor
Chair, Otolaryngology
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Mark Noble, PhD, *Stanford University*
Professor
Martha M. Freeman, MD Professorship in Biomedical Genetics
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Samuel Norman-Haignere, PhD, *Massachusetts Institute of Technology*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology, Neuroscience
Joint Appointment(s): Biomedical Engineering

M. Kerry O'Banion, MD, PhD, *University of Illinois*
Professor
Vice Chair, Neuroscience
Primary Appointment(s): Neuroscience

Thomas O'Connor, PhD, *University of Virginia*
Professor
Wynne Distinguished Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neuroscience, Obstetrics and Gynecology

John Olschowka, PhD, *University of California, Davis*
Professor
Primary Appointment(s): Neuroscience

Krishnan Padmanabhan, PhD, *Carnegie Mellon University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science

Sara Patterson, PhD, *University of Washington*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience, Flaum Eye Institute

Elise Piazza, PhD, *University of California, Berkeley*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience

Martina Poletti, PhD, *Boston University*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Neuroscience; Center for Visual Science

Douglas Portman, PhD, *University of Pennsylvania*
Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience, Biology

Christoph Pröschel, PhD, *Oxford University*
Professor
Primary Appointment(s): Biomedical Genetics

Lizabeth Romanski, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Biomedical Engineering

Michele Rucci, PhD, *Scuola Superiore Sant'Anna*
Professor
Primary Appointment(s): Brain and Cognitive Science
Joint Appointment(s): Neuroscience

Souvarish Sarkar, PhD, *Iowa State University*
Assistant Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience

Jesse Schallek, PhD, *SUNY Upstate Medical University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience

Giovanni Schifitto, MD, *Universita Degli Studi di Milano*
Professor
Esther Aresty Granite Professor in Neurology
Primary Appointment(s): Neurology
Joint Appointment(s): Electrical and Computer Engineering, Imaging Science

Ruchira Singh, PhD, *Kansas State University*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics

Nathan A. Smith, PhD, *University of Rochester*
Associate Professor
Associate Dean for Equity and Inclusion in Research and Research Education
Primary Appointment(s): Neuroscience

Adam Snyder, PhD, *The City University of New York*
Assistant Professor
Primary Appointment(s): Brain and Cognitive Sciences, Neuroscience

Marissa Sobolewski-Terry, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Environmental Medicine

Gabriella Sterne, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Benjamin Suarez-Jimenez, PhD, *University College–London*
Assistant Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science

Duje Tadin, PhD, *Vanderbilt University*
Professor
Chair, Brain and Cognitive Sciences
Primary Appointment(s): Brain and Cognitive Sciences
Joint Appointment(s): Ophthalmology, Neuroscience, Center for Visual Science

Charles Thornton, MD, *University of Iowa*
Professor
Saunders Family Distinguished Professor in Neuromuscular Research
Primary Appointment(s): Neurology
Joint Appointment(s): Neuroscience

Madalina Tivarus, PhD, *The Ohio State University*
Associate Professor
Primary Appointment(s): Imaging Sciences, Neuroscience

Kuan Hong Wang, PhD, *University of California, San Francisco*
Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

Patricia White, PhD, *California Institute of Technology*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Otolaryngology

David Williams, PhD, *University of California, San Diego*
Professor
William G. Allyn Chair of Medical Optics
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Brain and Cognitive Sciences, Biomedical Engineering

Andrew P. Wojtovich, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Houhui (Hugh) Xia, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Admissions

Applying to Doctoral Programs

Students entering the program typically have a baccalaureate degree in one of the natural or applied sciences (such as biological sciences, chemistry, physics, neuroscience, psychology, biomedical engineering). Successful applicants usually have had college-level coursework, or equivalent professional experience, in disciplines relevant for neuroscience, including the biological sciences, chemistry, physics, and mathematics. In addition, prior laboratory research experience is strongly recommended.

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Students are admitted to the PhD program, as a whole, rather than to a specific laboratory. Full-time study is required.

We expect all application materials (except official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and test scores, and to require submission of official documentation at any point in the admissions review process.

Required Materials

- SMD graduate admissions application
- Statement of purpose
- Transcript(s)
- Three letters of recommendation
- GRE scores will not be used by the admissions committee even if submitted. Note: Because we share our admissions system with other programs, we are unable to remove the field that requests GRE information. Applicants can disregard this field. If GRE scores are submitted, the committee will not look at it or take it into account when making admissions decisions.
- For applicants whose native language is not English, official TOEFL (SMD school code: 2948, SOPHAS application code: 5688) or IELTS score
- Research papers, publications and other original works (optional)
- CV/resume (optional)

Please do not include secondary school documentation or financial documentation. These are not used during the admissions process.s.

Evaluation of Applications by the Admissions Committee

Our admissions evaluation process follows three core tenets, using specific metrics to define excellence in each area:

1. Likelihood that the applicant can successfully complete the academic requirements to obtain a PhD from the NGP
   - Cumulative GPA and grades in STEM courses
   - Research and other work experiences
   - Writing skills
   - Reference feedback
2. Programmatic match with individual's professional goals
   - Relevance of coursework
   - Alignment of research interests and experience
   - Stated commitment to research
   - Reference feedback
3. Potential to contribute to institutional core values (provide link to iCare values)
   - Leadership
   - Reliability/dependability
   - Teamwork and service
   - Commitment to diversity, equity, and inclusion

These are the core assessment areas, but our evaluations extend to other critical factors, including but not limited to considerations that cross categories: resilience, recovery from setbacks, effective adaptation to changing/stressful environments and situations.

Highlights About Our Admissions Process

- There is no GRE score requirement.
- There is no "triage" line for consideration.
- Every application received before the deadline is read by faculty on the admissions committee.
- The admissions committee has both faculty and student members.
- Consistent evaluation rubrics (scores based on core tenets) are used for all applicants.

Selected applicants will interview with at least five program faculty members whose further evaluation will be considered before any admissions offer is recommended.

Academics

Master's Degrees and Requirements

In pursuit of the PhD, students can earn a master's degree en passant. The master's degree is awarded after satisfactory completion of the Part I and Part II qualifying exams and a minimum of 30 credits hours of study in:

- Cellular Neuroscience
- Integrative and Systems Neuroscience
- Ethics in Research
- Human Brain Anatomy
- Introduction to Programming
- Three to four laboratory rotations
- Four semesters of Journal Club
- Applied Statistics in the Biomedical Sciences
- Teaching assistant for one semester

- NSC Student Seminar
- Dissertation research
- Ten elective credits including Neuroinflammation, Biology of Neurological Disease, and/or a host of interdepartmental courses offered by Brain and Cognitive Sciences, Center for Visual Science, Biomedical Engineering, and Biostatistics and Computational Biology, to name a few.

Part I Exam
The student, in consultation with their advisor, selects a minimum of 50 papers to read that are relevant to the student's scientific area of interest. Based on the readings, the student formulates five broad hypothesis-driven research questions at the end of the reading period. With the committee's approval, the student composes written answers to these questions.

Part II
Thesis Proposal/Qualifying Exam: After passing the Part I exam, the student is expected to formulate a thesis proposal with the guidance of their thesis advisor. The written proposal includes the specific aims and overall significance of the proposed research, sufficient background for others to understand the research plan, key preliminary data that support the aims, and a description of the experimental design that will be used to accomplish the stated aims. Successful completion of the thesis proposal/qualifying Exam advances the student to candidacy for the PhD degree.

Doctoral Degrees and Requirements

The neuroscience degree provides a comprehensive, research-intensive training experience for students seeking a PhD degree in the study of the nervous system. The first-year curriculum provides students with a thorough understanding of the fundamental concepts that underlie contemporary neuroscience, from the molecular and cellular to systems levels. Active learning is fostered through participation in the Neuroscience Journal Club, Student Seminar, and laboratory rotations with faculty selected by the student. During the first year, students engage in a rigorous curriculum in cellular and systems neuroscience that builds a solid foundation for subsequent, more specialized coursework tailored to the individual career and research interests of each student. In addition, first-year students complete three laboratory rotations that, through active participation in a research project, provide an insider's view of the research interests, laboratory environment, and mentoring style of potential thesis advisors. At the end of the first year, students choose a PhD degree track (neuroscience or neurobiology and anatomy) and thesis advisor and begin developing and carrying out their dissertation research. Training in subsequent years occurs largely through active participation in laboratory research, journal clubs, seminars, and continuous participation in local, national, and international scientific meetings. Students are awarded the PhD degree upon successful defense of scholarly research described in a publishable dissertation.

The PhD is an interdepartmental degree with over 90 faculty members serving as mentors for students. Faculty represent nearly 30 basic science and clinical departments and centers from the School of Medicine and Dentistry and the schools of Arts, Sciences, and Engineering. Faculty research interests span all major themes in neuroscience, including neural cell signaling and communication; learning, memory, and adaptive plasticity; neurobiology of disease; neurodevelopment and aging; neuroengineering; neurogenetics; sensory, motor, and integrative systems neuroscience; and neuroregeneration and repair. Collaborations across these themes are a hallmark of the program, providing students the opportunity to design thesis projects without regard to traditional boundaries.

Students completing the track are awarded a PhD in neuroscience.

Considerations for MSTP Students in the MD/PhD Program
Students admitted to the MD/PhD program proceed with the same course of study as other students in the PhD program, except they often begin their lab rotations in the summer before they join the program to choose a lab and research advisor. MD/PhD students can also transfer up to 10 credit hours from medical school courses and are not required to register for NSC 511 and NSC 581.

GRADUATE COURSE TITLES

ANA 512. Cellular Neuroscience
ANA 513. Neuroinflammation
ANA 518. Introduction to Neuroengineering
ANA 522. Neuroscience Student Seminar
ANA 581. Teaching Tutorial in Neuroscience
ANA 591. PhD Readings/Special Topics
ANA 595. PhD Research in Neuroscience
BCSC 501. Language
BCSC 502. Cognition
BCSC 508. Cognitive Neuroscience
BCSC 511. Behavioral Methods in Cognitive Science
BCSC 512. Computational Methods in Cognitive Science
BCSC 513. Introduction to fMRI: Imaging, Computational Analysis, and Neural Representations
BCSC 532. Probabilistic Theories of Cognitive Processing
BCSC 543. Neurochemical Foundations of Behavior
BCSC 546. Biology of Mental Disorders
BCSC 547A. Advanced Computational Neuroscience
BME 416. Speech on the Brain
BME 472. Advanced Biomedical Microscopy
BST 463. Introduction to Biostatistics
BST 465. Design of Clinical Trials
BST 467. Applied Statistics in the Biomedical Sciences
ECE 440. Introduction to Random Processes
GEN 503. Genetics Seminar
GEN 506. Principles in Stem Cell Biology
GEN 507. Advanced Genetics and Genomics
GEN 508. Genes, Development, and Disease
IND 409. Cell Biology

IND 417. Workshop in Scientific Communications
IND 418. Biostatistics Boot Camp
IND 420. Mastering Scientific Information
IND 431. Foundations Modern Biology I
IND 439. Leadership and Management for Scientists
IND 447. Signal Transduction
IND 501. Ethics and Professional Integrity
IND 511. URBest Internship
LING 425. Introduction to Semantic Analysis
LING 428. Lexical Semantics
MBI 589. Virology Seminar
MBI 473. Immunology
MBI 515. Advanced Immunology
NSC 410. Introduction to Programming
NSC 420. Biostatistics and Experimental Design Boot Camp
NSC 503. Neuroscience Student Seminar
NSC 511. Human Brain Anatomy
NSC 512. Cellular Neuroscience
NSC 525. Biology of Neurological Disease
NSC 531. Integrative and Systems Neuroscience
NSC 541. Neurons, Circuits, Systems
NSC 547. Introduction to Data Analysis Methods in Neuroscience
NSC 581. Teaching Tutorial in Neuroscience
NSC 590. Lab Rotations in Neuroscience
NSC 591. PhD Readings/Special Topics
NSC 592. Neuroscience Journal Club
NSC 595. Neuroscience PhD Research
PHP 404. Principles of Pharmacology
PHP 405. Effective Scientific Communication
PHP 447. Signal Transduction
PHP 467. Statistical Rigor and Data Analysis
PM 419. Recruitment and Retention
PM 488. Experimental Therapeutics
PTH 507. Cancer Biology
PTH 509. Pathways of Human Disease
PTH 571. Molecular Basis of Disease
TOX 521. Toxicology I
TOX 522. Toxicology II
TOX 560. Societal Determinants of Neurotoxicity

Pathology

Christa Whitney-Miller
Chair

Jennifer Findeis-Hosey
Vice Chair for Education

Helene R. McMurray
Program Director

Benjamin Frisch
Assistant Program Director

Overview

The PhD program in pathology trains students to understand the cell biological basis for human disease and to leverage those discoveries for better diagnosis and treatment options. Our program is housed in the Department of Pathology and Laboratory Medicine, but our mentoring faculty come from myriad clinical and basic science departments at University of Rochester Medical Center.

The Pathology PhD program encompasses studies of the molecular, cell biological, and pathophysiological underpinnings of human disease. Students may choose the general knowledge pathway, Cell Biology of Disease, or may concentrate their studies in either Cancer Biology or Bioinformatics. Our trainees make discoveries about the underlying mechanisms of human disease on a path to developing new treatments or diagnostic tests. Graduates go on to rewarding careers in academic, medical, industrial, nonprofit, and government settings.

Our PhD program is multidisciplinary in nature, drawing on faculty expertise in all aspects of human biology, including molecular underpinnings of disease; examination of cell, tissue, and animal model systems; employment of "-omic" sciences and informatics, and design of therapeutic interventions. Core areas of research are diseases of the cardiopulmonary and sensory/neurological systems, the orthopaedic and musculoskeletal system, the hematopoietic and immune systems, and the biology of cancer.

Mission Statement and Strategic Goals

The pathology PhD program trains the next generation of biomedical scientists in a wide range of scientific ideas and cutting-edge approaches while affording each trainee maximum flexibility to achieve their goals.

https://www.urmc.rochester.edu/education/graduate/phd/pathology.aspx

Gradate Faculty Information

Brian Altman, PhD, *Duke University*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Jennifer Anolik, MD, PhD, *University of Rochester*
Professor
Associate Chair for Research in Medicine; Interim Chief, Allergy, Immunology, and Rheumatology
Primary Appointment(s): Medicine–Allergy, Immunology, and Rheumatology
Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Jeevisha Bajaj, PhD, *National Centre for Biological Sciences, TIFR*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Lisa Beck, MD, *Stony Brook University*
Professor
Lowell A. and Carol A. Goldsmith Professor in Dermatology
Primary Appointment(s): Dermatology
Joint Appointment(s): Pathology and Laboratory Medicine; Medicine–Allergy, Immunology, and Rheumatology

Rajnish Bharadwaj, MBBS, *All India Institute of Medical Sciences;* PhD, *University of Texas Southwestern Medical Center*
Assistant Professor
Primary Appointment(s): Pathology and Laboratory Medicine
Joint Appointment(s): Neuroscience

Paul Brookes, PhD, *University of Cambridge*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine–Research
Joint Appointment(s): Pharmacology and Physiology

Laura Calvi, MD, *Harvard University*
Professor
SKAWA Foundation Professor in Endocrinology and Metabolism; Vice Chair for Basic and Translational Science, Medicine
Primary Appointment(s): Medicine–Endocrine/Metabolism
Joint Appointment(s): Wilmot Cancer Institute, Pathology and Laboratory Medicine, Pharmacology and Physiology

Chike Cao, PhD, *Rutgers University*
Assistant Professor
Primary Appointment(s): Orthopaedics, Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology

Darren Carpizo, MD, *University of Illinois; PhD, University of California, Los Angeles*
Professor
Primary Appointment(s): Surgery–Oncology
Joint Appointment(s): Wilmot Cancer Institute

Calvin Cole, PhD, *Georgia State University*
Assistant Professor
Primary Appointment(s): Surgery–Research
Joint Appointment(s): Orthopaedics–Center for Musculoskeletal Research; Wilmot Cancer Institute

David Dean, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Pediatrics–Neonatology

Thomas Diekwisch, DMD, *Philipps–University Marburg;* PhD, *University of Marburg*
Professor
Margaret and Cy Welcher Professorship in Dental Research; Chair, Oral and Craniofacial Sciences
Primary Appointment(s): Dentistry–Oral and Craniofacial Sciences
Joint Appointment(s): Dentistry Pharmacology and Physiology, Pediodontology

Ting Du, MD, PhD, *China Medical University*
Assistant Progessor
Primary Appointment(s): Neurology–Center for Translational Neuromedicine

Alison Elder, PhD, *University of California, Irvine*
Associate Professor
Co-Director, PhD Program in Toxicology
Primary Appointment(s): Environmental Medicine

Roman Eliseev, MD, *Russian State Medical University;* PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Pathology and Laboratory Medicine, Pharmacology and Physiology

Fabeha Fazal, PhD, *Aligarh Muslim University*
Associate Professor
Primary Appointment(s): Pediatrics–Neonatology

Benjamin Frisch, PhD, *University of Rochester*
Assistant Professor
Assistant Director, PhD Program in Pathology
Primary Appointment(s): Pathology and Laboratory Medicine
Joint Appointment(s): Biomedical Engineering

Steve Georas, MD, *Brown University*
Professor
Walter and Carmina Mary Parkes Family Distinguished Professor
Primary Appointment(s): Medicine–Pulmonary Diseases and Critical Care
Joint Appointment(s): Environmental Medicine, Microbiology and Immunology

Scott Gerber, PhD, *University of Rochester*
Associate Professor
Co-Director, Center for Tumor Immunology Research
Primary Appointment(s): Surgery–Research
Joint Appointment(s): Wilmot Cancer Institute, Microbiology and Immunology, Radiation Oncology

Angela Glading, PhD, *University of Pittsburgh*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Biomedical Engineering, Pathology and Laboratory Medicine

Lauren Hablitz, PhD, *University of Alabama at Birmingham*
Assistant Professor
Primary Appointment(s): Neurology–Center for Translational Neuromedicine

Stephen Hammes, MD, PhD, *Duke University*
Professor
Louis S. Wolk Distinguished Professor in Medicine; Chief, Medicine–Endocrine/ Metabolism; Executive Vice Chair, Medicine
Primary Appointment(s): Medicine–Endocrine/ Metabolism
Joint Appointment(s): Microbiology and Immunology, Pharmacology and Physiology, Pathology and Laboratory Medicine

Isaac Harris, PhD, *University of Toronto*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pharmacology and Physiology

J. Christopher Holt, PhD, *Tulane University*
Associate Professor
Director, PhD Program in Neuroscience
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Kirsi Jarvinen-Seppo, MD, PhD, *University of Helsinki*
Professor
Founders' Distinguished Professor of Pediatric Allergy
Primary Appointment(s): Pediatrics–Pediatric Allergy/ Immunology
Joint Appointment(s): Microbiology and Immunology, Medicine–Allergy, Immunology, and Rheumatology

Gail Johnson, PhD, *University of Rochester*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine–Research
Joint Appointment(s): Pharmacology and Physiology

Jennifer Jonason, PhD, *Yale University*
Research Associate Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research

Amy Kiernan, PhD, *Boston College*
Associate Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics

Minsoo Kim, PhD, *The Ohio State University*
Professor
Dean's Professor in Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology–Center for Vaccine Biology and Immunology
Joint Appointment(s): Pharmacology and Physiology

Benjamin Korman, MD, *The Ohio State University*
Associate Professor
Primary Appointment(s): Medicine–Allergy, Immunology and Rheumatology

Yi-Fen Lee, PhD, *University of Wisconsin–Madison*
Professor
Primary Appointment(s): Urology

Richard Libby, PhD, *Boston College*
Professor
Senior Associate Dean, Graduate Education and Post-Doctoral Affairs
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Pathology and Laboratory Medicine; Biomedical Genetics; Center for Visual Science

Alayna Loiselle, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Biomedical Engineering, Pathology and Laboratory Medicine

Xianghong Luan, MD, *Chinese Academy of Preventive Medicine*
Professor
Primary Appointment(s): Dentistry
Joint Appointment(s): Oral and Craniofacial Sciences, Periodontology

Thomas Mariani, PhD, *Rutgers University*
Professor
David H. Smith Professor in Pediatrics
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Biomedical Genetics, Environmental Medicine

Matthew McGraw, MD, *SUNY Upstate College of Health Professionals*
Assistant Professor
George Washington Goler Chair in Pediatrics
Primary Appointment(s): Pediatrics–Pulmonology

Helene McMurray, PhD, *University of Rochester*
Associate Professor
Director, PhD Program in Pathology; Co-Director, Histocompatibility Laboratory
Primary Appointment(s): Pathology and Laboratory Medicine

Craig Morrell, DVM, *Tufts University;* PhD, *Johns Hopkins University*
Professor
Dean's Professorship; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine

Gowrishankar Muthukrishnan, PhD, *University of Central Florida*
Assistant Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Microbiology and Immunology

Anne Nichols, PhD, *Virginia Polytechnic Institute and State University (Virginia Tech)*
Senior Instructor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research

James Palis, MD, *University of Rochester*
Professor
Northumberland Trust Professor in Pediatrics
Primary Appointment(s): Pediatrics–Hematology and Oncology
Joint Appointment(s): Pathology and Laboratory Medicine

Jinjiang Pang, PhD, *Peking Union Medical College*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

Archibald Perkins, MD, PhD, *Columbia University*
Professor
Primary Appointment(s): Pathology and Laboratory Medicine

Christoph Proschel, PhD, *Oxford University*
Associate Professor
Primary Appointment(s): Biomedical Genetics

Homaira Rahimi, MD, *New Jersey Medical School*
Associate Professor
Primary Appointment(s): Pediatrics–Pediatric Rheumatology

Arshad Rahman, PhD, *Aligarh Muslim University*
Professor
Associate Director, Strong Children's Research Center
Primary Appointment(s): Pediatrics –Neonatology
Joint Appointment(s): Pharmacology and Physiology

Irfan Rahman, PhD, *Nagpur University*
Professor
Dean's Professorship of Environmental Medicine
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Public Health Sciences; Medicine–Pulmonary and Critical Care

Regina Rowe, MD, *St. Louis University;* PhD, *Washington University*
Assistant Professor
Primary Appointment(s): Pediatrics–Infectious Diseases

Edward Schwarz, PhD, *Einstein College of Medicine*
Professor
Richard and Margaret Burton Distinguished Professor in Orthopaedics; Director, Center for Musculoskeletal Research
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Urology, Pathology and Laboratory Medicine, Biomedical Engineering, Microbiology and Immunology, Medicine–Allergy/Immunology and Rheumatology

Ruchira Singh, PhD, *Kansas State University*
Associate Professor
Dean's Professor of Ophthalmology
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Biomedical Genetics, Center for Visual Science, A&S

Eric Small, PhD, *University of Texas*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology; Biomedical Engineering

Laurie Steiner, MD, *Mount Sinai Medical Center*
Professor
Lindsey Distinguished Professor for Pediatric Research, Pediatrics; Associate Director, Medical Scientist Training Program
Primary Appointment(s): Pediatrics–Neonatology

Martha Susiarjo, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Environmental Medicine

Michel Telias, PhD, *Tel Aviv University*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience, Center for Visual Science

Juilee Thakar, PhD, *University of Wurzburg*
Associate Professor
Director, PhD Program in Translational Biomedical Sciences
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Biostatistics and Computational Biology, Biomedical Genetics

Paula Vertino, PhD, *University at Buffalo*
Professor
Wilmot Distinguished Professor in Cancer Genomics; Senior Associate Dean, Basic Research
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pathology and Laboratory Medicine

Nicole Wilson, MD, *Rush Medical College at Rush University;* PhD, *Illinois Institute of Technology*
Assistant Professor
Primary Appointment(s): Department of Surgery, Pediatric Surgery
Joint Appointment(s): Department of Biomedical Engineering; Department of Pediatrics

Collynn Woeller, PhD, *Cornell University*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Environmental Medicine; Center for Visual Science

Terry Wright, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics –Infectious Diseases
Joint Appointment(s): Microbiology and Immunology

Chia-Lung Wu, PhD, *Duke University*
Assistant Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Biomedical Engineering

Lianping Xing, MD, *Fourth Military Medical University, Xian;* PhD, *Pennsylvania State University*
Professor
Primary Appointment(s): Pathology and Laboratory Medicine

Chen Yan, PhD, *University of Washington*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

Peng Yao, PhD, *Chinese Academy of Sciences*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Biochemistry and Biophysics

Zhenqiang Yao, PhD, *University of Westminster*
Associate Professor
Primary Appointment(s): Pathology and Laboratory Medicine
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering, Dentistry

Shu-Yuan Yeh, PhD, *University of Wisconsin*
Professor
Primary Appointment(s): Urology

Hengwei Zhang, B.Med, *PhD, Nanjing Medical UniversityRank: Assistant Professor*
Primary Appointment(s): Pathology and Laboratory Medicine

Xinping Zhang, MD, *Shanghai Medical University;* PhD, *University of Rochester*
Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research

Admissions

Applying to Doctoral Programs

Admission to the Pathology PhD program is highly competitive with less than 20 percent of applicants admitted each year. Successful applicants have a bachelor's degree in the biological or biomedical sciences with previous laboratory research experience and a clearly stated motivation for choosing to pursue graduate studies in pathology (preparation for this field of study, related research interests, and future career plans). Many applicants have additional post-baccalaureate research experience or are pursuing a master's degree in a biomedical field at the time of their application.

Prospective PhD students apply for admission through the School of Medicine and Dentistry (SMD) online application. Application deadlines are set by SMD, generally due in the late fall. Based on written materials, applicants are invited for interviews, after which select candidates are offered admission. Admitted students are notified immediately following the interview period with a decision deadline in early spring. Students may

arrive on campus for a summer rotation block, usually beginning on July 1, or the start of the fall semester, usually late August. Accepted students receive a full-tuition scholarship, paid individual health insurance, and an annual stipend.

Academics

Master's Degrees and Requirements

The Pathology program awards an en passant Master of Science degree in Pathology to students upon successful completion of their qualifying examination, which must be taken by the second month of their third year. The program does not offer a standalone Master's degree.

Doctoral Degrees and Requirements

During the first year of study, students take foundational coursework covering fundamentals of molecular and cell biology, biochemistry, genetics, and human disease. Alternatively, students may choose a path that concentrates their studies in cancer biology or in bioinformatics, forgoing some of the general coursework for more focused courses later in their program of study. Students also conduct research for academic credit in multiple laboratories, usually three, to identify the mentor with whom they will conduct their thesis work. Through program activities and coursework, students also begin to grow their professional skills, such as writing and public speaking/scientific presentation.

At the start of the second year, students affiliate with a mentor's laboratory and embark on the research that will comprise their dissertation. In addition, second-year students take elective coursework related to their scientific interests, including courses required by their chosen concentration, if any. With their mentor and thesis advisory committee, students write a proposed research plan, which they defend in an oral presentation as a two-step dissertation qualifying examination. After completing this milestone, students focus almost exclusively on their thesis research projects and dissemination of their results.

Pathology PhD students graduate in an average of 5.5 years, usually with multiple scientific publications. Trainees have the opportunity to travel and present at conferences and to gain additional professional skills, such as leadership, teaching, scientific communication, or bio-manufacturing through coursework and extracurricular activities. Some even conduct internships in industry or government settings as they move toward graduation.

GRADUATE COURSE TITLES

PHP 447. Signal Transduction
PTH 504. Current Topics in Experimental Pathology
PTH 507. Cancer Biology
PTH 509. Cell Biology of Human Disease I
PTH 510. Cell Biology of Human Disease II
PTH 595. PhD Research
IND 419. Introduction to Quantitative Biology
IND 431. Foundations of Modern Biology I
IND 432. Foundations of Modern Biology II
IND 484. Current Topics in Bioinformatics
IND 501. Ethics and Professional Integrity in Research
IND 507. Cancer Biology Seminar
IND 517. Clinical and Translational Oncology
BCH 521. Bioinformatics for Life Scientists
BST 467. Applied Statistics for the Biomedical Sciences
CVS 401. Cardiovascular Biology and Disease
GEN 506. Principles in Stem Cell Biology
GEN 508. Advanced Genetics and Genomics
MBI 473. Immunology

Pharmacology

Robert T. Dirksen
Chair

John D. Lueck
PhD Program Co-Director

David M. MacLean
PhD Program Co-Director

Paul J. Kammermeier
MS Program Director

Overview

The objective of the cellular and molecular pharmacology program is to provide a thorough understanding of basic pharmacology and to prepare graduates for careers as investigative pharmacologists and physiologists in academia, industry, government, and other careers. The PhD and MS degree programs include coursework in pharmacology, physiology, and the basic biomedical sciences as well as seminar participation. The main component of the PhD program is original laboratory investigation in pharmacology within an affiliated lab. The PhD degree is awarded upon completion of scholarly work and research described in a publishable dissertation. Similarly, the main component of the Plan A MS degree is original laboratory research, although narrower in scope than PhD work. We also offer a Plan B MS degree that is focused on a comprehensive literature review of a particular topic.

The PhD and MS programs are hosted within the Department of Pharmacology and Physiology. Department faculty, fellows, students, and staff are dedicated to cutting-edge scientific research for a better understanding of how the human body functions and to alleviate diseases. Our department and program contain international leaders in multiple areas, including cardiovascular disease, vascular biology, cellular signaling, G-protein coupled receptors, ion channels, mitochondria, muscle biology and neurodegeneration, and neuropharmacology.

Learners in our programs generally work with several faculty mentors during their first-year rotations. This is an excellent opportunity to gain wide experience and appreciate different mentoring styles. Ultimately, learners select a single mentor (or occasionally co-mentors) with whom they conduct the majority of their work. However, through our coursework, seminar program, and general interactions within the department, learners are exposed to concepts, techniques, and active research questions in all these areas. Furthermore, our training environment features experts in multiple techniques, such as advanced microscopy, molecular biology, biochemistry, electrophysiology, animal behavior, and transcriptomics.

In addition, our program emphasizes improving scientific communication skills, both written and oral. Our curriculum includes specific courses on scientific communication as well as annual, or more frequent, presentations from students through the seminar program. This combination of foundational course work, experimental research training, and communication skills leaves our learners well prepared for their career goals. Graduates go on to academic postdocs and positions in industry and biotech startups.

Mission Statement and Strategic Goals

Our mission is to train and mentor the next generation of pharmacologists and physiologists and to position our learners to achieve their career goals within these disciplines. Our strategic goals are three-fold. First, we aim to provide instruction in foundational pharmacology and physiology concepts as well as the latest conceptual and technical developments. Second, we mentor our learners in developing critical thinking and experimental design skills as well as technical proficiency in laboratory science. Third, we emphasize written and oral communication skills so learners can effectively communicate their work.

https://www.urmc.rochester.edu/education/graduate/phd/pharmacology-and-physiology.aspx

Graduate Faculty Information

Douglas M. Anderson, PhD, *Arizona State University*
Assistant Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology

Bradford C. Berk, MD, PhD, *University of Rochester*
Professor
Distinguished University Professor; Director, Neurorestoration Institute
Primary Appointment(s): Medicine–Cardiology
Joint Appointment(s): Neurology, Pharmacology and Physiology

Jean M. Bidlack, PhD, *University of Rochester*
Professor
Associate Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Paul S. Brookes, PhD, *University of Cambridge*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Laura M. Calvi, MD, *Harvard University*
Professor
SKAWA Foundation Professor
Primary Appointment(s): Medicine–Endocrine/Metabolism
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine

Chike Cao, PhD, *Rutgers University*
Assistant Professor
Primary Appointment(s): Orthopaedics Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology

David A. Dean, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Pediatrics Neonatology
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Ian M. Dickerson, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Thomas Diekwisch, DMD, PhD, *The Philipp University of Marburg*
Professor
Margaret and Cy Welcher Professorship in Dental Research; Chair, Oral and Craniofacial Sciences
Primary Appointment(s): Oral and Craniofacial Sciences, Eastman Institute for Oral Health
Joint Appointment(s): Periodontology, Pharmacology and Physiology

Robert T. Dirksen, PhD, *University of Rochester*
Professor
Lewis Pratt Ross Professorship of Pharmacology and Physiology; Chair, Department of Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Scott Earley, PhD, *University of New Mexico*
Professor
Primary Appointment(s): Pharmacology and Physiology

Yumei Feng Earley, MD, *Zhejiang University; PhD, Chongqing University*
Professor
Primary Appointment(s): Medicine–Nephrology
Joint Appointment(s): Pharmacology and Physiology

Roman A. Eliseev, MD, *Russian State Medical University;* PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Orthopaedics Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine

Megan Falsetta Wood, PhD, *University of Iowa*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Pharmacology and Physiology

Fabeha Fazal, PhD, *Aligarth Muslim University*
Associate Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Pharmacology and Physiology

Manoela V. Fogaça, PhD, *University of Sao Paulo*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Angela J. Glading, PhD, *University of Pittsburgh*
Associate Professor
Director, Medical Pharmacology Master's Program
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Biomedical Engineering, Pathology and Laboratory Medicine

Suzanne N. Haber, PhD, *Stanford University*
Professor
Dean's Professorship in Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience, Psychiatry

Stephen R. Hammes, MD, PhD, *Duke University*
Professor
Louis S. Wolk Distinguished Professorship in Medicine; Chief, Endocrine/Metabolism; Executive Vice Chair, Medicine
Primary Appointment(s): Medicine
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine, Microbiology and Immunology

Isaac S. Harris, PhD, *University of Toronto*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pharmacology and Physiology

Denise C. Hocking, PhD, *Albany Medical College*
Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Biomedical Engineering

J. Christopher Holt, PhD, *Tulane University*
Associate Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Zheng-Gen Jin, PhD, *China*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

Gail V. W. Johnson, PhD, *University of Delaware*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Paul J. Kammermeier, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Minsoo Kim, PhD, *The Ohio State University*
Professor
Dean's Professorship in Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology, Center for Vaccine Biology and Immunology
Joint Appointment(s): Pharmacology and Physiology

Whasil Lee, PhD, *Duke University*
Associate Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Pharmacology and Physiology

John D. Lueck, PhD, *University of Rochester*
Associate Professor
Co-Director, Cellular and Molecular Pharmacology Program
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neurology

David M. MacLean, PhD, *McGill University*
Associate Professor
Paul Stark Professorship in Pharmacology; Co-Director, Cellular and Molecular Pharmacology Program
Primary Appointment(s): Pharmacology and Physiology

Julian Meeks, PhD, *Washington University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pediatrics, Pharmacology and Physiology

Craig Morrell, PhD, *Johns Hopkins University;* DVM, *Tufts University School of Veterinary Medicine*
Professor
Dean's Professorship in Medicine; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine

Maiken Nedergaard, MD, DMSc, *University of Copenhagen*
Professor
Co-Director, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Pharmacology and Physiology, Neurosurgery

Keith W. Nehrke, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine, Nephrology
Joint Appointment(s): Pharmacology and Physiology

John Onukwufor, PhD, *University of Prince Edward Island*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Environmental Medicine

Cesare Orlandi, PhD, *University of Brescia*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Makaía Papasergi-Scott, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Pharmacology and Physiology

George A. Porter, Jr., MD, PhD, *University of Rochester*
Professor
Rhea and Raymond White Professorship in Pediatric Cardiology; Chief, Pediatric Cardiology
Primary Appointment(s): Pediatrics, Cardiology
Joint Appointment(s): Pharmacology and Physiology, Medicine–Aab Cardiovascular Research Institute

Arshad Rahman, PhD, *Aligarth Muslim University*
Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Pharmacology and Physiology

Eileen M. Redmond, PhD, *University College Dublin*
Professor
Primary Appointment(s): Surgery
Joint Appointment(s): Pharmacology and Physiology

Eric M. Small, PhD, *The University of Texas at Austin*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Michel S. Telias, PhD, *Tel Aviv University*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience, Pharmacology and Physiology, Center for Visual Science

V. Kaye Thomas, PhD, *New York University*
Assistant Professor
Technical Director, Center for Advanced Light Microscopy and Nanoscopy
Primary Appointment(s): Pharmacology and Physiology

Kuan Hong Wang, PhD, *University of California, San Francisco*
Professor
Dean's Professorship in Neuroscience
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

R. James White III, MD, PhD, *University of Pittsburgh*
Professor
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
Joint Appointment(s): Pharmacology and Physiology, Pediatrics

Andrew P. Wojtovich, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Houhui (Hugh) Xia, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Chen Yan, PhD, *University of Washington*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

Peng Yao, PhD, *China-Chinese Academy of Sciences*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Biochemistry and Biophysics

Zhenqiang Yao, PhD, *University of Westminster*
Associate Professor
Primary Appointment(s): Pathology and Laboratory Medicine
Joint Appointment(s): Pharmacology and Physiology

Shu-Chi Yeh, PhD, *McMaster University*
Assistant Professor
Primary Appointment(s): Orthopedics, Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

David I. Yule, PhD, *University of Liverpool*
Professor
Louis C. Lasagna Professorship in Experimental Therapeutics
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Center for Oral Biology, Medicine–Gastroenterology/Hepatology

Admissions

Applying to Doctoral Programs

Successful applicants to our PhD program generally have a four-year baccalaureate degree, typically in basic or applied sciences such as biology, biochemistry, physiology, chemistry, or biomedical engineering. Students applying with degrees in other backgrounds may also apply but should have some basic training in biology, biochemistry, cell biology, and organic chemistry. Courses in molecular biology, statistics, and physics are encouraged but not required. Graduate record exam scores are not required. Undergraduate, or graduate if applicable, transcripts are required. Successful applicants to the PhD program will also generally have laboratory experience such as from undergraduate projects, summer research experiences, and/or employment in a research lab or an MS degree program. Applicants must arrange to have at least three letters of support submitted on their behalf. These letters should be sent from people with direct knowledge of the applicant's academic and/or research potential.

We also require a personal statement from each applicant. We recognize that learners come from diverse backgrounds and life experiences, with varying levels of access to lab experience and educational opportunities, as well as different time and life commitments. In our experience, the best predictor of success in our PhD program is not the GPA or ranking of undergraduate institution. Rather, the best predictors are an interest in their research that is both genuine and deep; a strong work ethic and resilience; and an abundant capacity to adapt, grow, and learn. These factors can be difficult to demonstrate in a typical resume. Therefore, we encourage applicants to specifically address the following criteria in their personal statement: their enthusiasm and motivation for research, their fit to our specific program, and circumstances that demonstrate their adaptability and resilience in a research or of real-life setting.

Applying to Master's Programs

Successful applicants to our MS program will generally have a four-year baccalaureate degree, typically in basic or applied sciences such as biology, biochemistry, physiology, chemistry, or biomedical engineering. Students applying with degrees in other backgrounds may also apply but should have some basic training in biology, biochemistry, cell biology, and organic chemistry. Courses in molecular biology, statistics, and physics are encouraged but not required. Graduate record exam scores are not required. Undergraduate, or graduate if applicable, transcripts are required. Successful applicants will also generally have some laboratory experience such as from undergraduate projects, summer research experiences, and/or employment in a research lab. Applicants must arrange to have at least three letters of support submitted on their behalf. These letters should be sent from people with direct knowledge of the applicant's research potential.

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our specific program, and circumstances that demonstrate their adaptability and resilience in a research or of real-life setting

Academics

Master's Degrees and Requirements

Required Courses Fall Semester

- Foundations in Modern Biology I
- Human Cell Physiology
- Ethics and Professional Integrity
- Pharmacology and Physiology Seminar*

Required Courses Spring Semester

- Foundations in Modern Biology II (Module 1)
- Signal Transduction
- Principles of Pharmacology
- Effective Scientific Communication
- Pharmacology and Physiology Seminar*

*Students must take this course every semester they are enrolled in the program. Students are also required to take five credits of electives that can be chosen from:

- Science Communication for Diverse Audiences
- Introduction to Cell Mechanics and Mechanobiology
- Immunology
- Introduction to Biostatistics
- Cancer Biology
- Cell Biology of Human Disease I
- Cellular Neuroscience
- Cardiovascular Biology and Disease
- Signal Transduction
- Introduction to Structure and Analysis of Biomolecules
- Ion Channels and Disease
- Drug Discovery
- Biology of Neurological Diseases
- Cell Biology of Human Disease II

Students may also request to take electives not on this list; however, this requires the approval of the pharmacology graduate Committee.

We offer two research MS degree paths: Plan A and Plan B. The Plan A MS is focused on bench research, and students complete an original laboratory research project. Plan A MS completes at least one, but not more than three, laboratory rotations before selecting a lab and MS mentor with whom to conduct their studies. Plan A MS students are also required to present at least twice in PHP 502; the first is a literature review and the second is the open component of their MS defense. Plan A students conduct a mentored research project, similar to a PhD thesis but much narrower in scope, write an MS dissertation, present their work in a public seminar, and defend it in a closed-door examination.

The Plan B MS degree focuses on literature research. Students complete a detailed assessment of primary scientific literature on a current or emerging topic of interest in pharmacology. In lieu of conducting lab rotations and practical experiments, Plan B students identify a mentor and, with the mentor's guidance, complete a master's essay that presents a critical review of a current pharmacology topic. They also present twice in PHP 502, which includes a public seminar and closed-door examination.

Doctoral Degrees and Requirements

Required Courses Fall Semester

- Foundations in Modern Biology I
- Human Cell Physiology
- Ethics and Professional Integrity
- Pharmacology and Physiology Seminar*

Required Courses Spring Semester

- Foundations in Modern Biology II (Module 1)
- Signal Transduction
- Principles of Pharmacology
- Effective Scientific Communication
- Pharmacology and Physiology Seminar*

Required Courses Summer Semester

- Statistical Rigor and Data Analysis

*Students must take this course every semester they are enrolled in the program. Students are also required to take six credits of electives which can be chosen from:

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- Introduction to Cell Mechanics and Mechanobiology
- Immunology
- Introduction to Biostatistics
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- Ion Channels and Disease
- Drug Discovery
- Biology of Neurological Diseases
- Cell Biology of Human Disease II

Students may also request to take electives not on this list; however, this requires the approval of the pharmacology graduate committee. .

PhD students are also required to complete three laboratory rotations within their first year. These include written rotation reports as well as a research seminar on one of these rotations. In the second year, PhD students must present two seminars. One will be a literature review and the other a research seminar.

In the third year, PhD students will undertake their qualifying exam. Upon the successful completion of their qualifying exam, students receive an MS degree and become a PhD candidate. For the remaining years, students are required to continue their research work, present their research data annually in the seminar program, and meet with their dissertation committee at least annually. Prior to their PhD defense, students must have completed one semester as a teaching assistant or peer tutor and must have submitted at least one first author manuscript for publication.

Bioinformatics Concentration

PhD students are eligible to participate in a New York State certified Concentration in Bioinformatics. This entails coursework to be taken using elective slots in the core curriculum (or in addition to other electives). The coursework is specifically designed to provide theoretical and practical training in bioinformatics, supplementing the core curriculum. Students in this concentration will take two existing courses, one focused on programming and the other on statistical analysis of biological data. These students will also take part in an interactive seminar featuring discussion of cutting-edge topics in the field. Coursework requirements for the Bioinformatics concentration can be fulfilled anytime during a student's training, so long as they are complete by the time of graduation. Choosing to participate in a Concentration is a decision that should be made by the student in consultation with their Ph.D. research advisor and/or the Program Director.

GRADUATE COURSE TITLES

PHP 403. Human Cell Physiology
PHP 404. Principles of Pharmacology
PHP 405. Effective Scientific Communication
PHP 447. Signal Transduction
PHP 465. Introduction to Cell Mechanics and Mechanobiology
PHP 467. Statistical Rigor and Data Analysis
PHP 468. Introduction to Structure and Analysis of Biomolecules
PHP 491. Master's Readings
PHP 492. Master's Essay
PHP 495. Master's Research
PHP 496. Master's Lab Rotations
PHP 502. Pharmacology and Physiology Seminar
PHP 550. Ion Channels and Disease
PHP 595. PhD Research
PHP 596. PhD Lab Rotations
IND 426. Science Communication for Diverse Audiences
PHP 465. Introduction to Cell Mechanics and Mechanobiology
MBI 473. Immunology
BST 463. Introduction to Biostatistics
PTH 507. Cancer Biology
PTH 509. Cell Biology of Human Disease I
NSC 512. Cellular Neuroscience
CVS 401. Cardiovascular Biology and Disease
IND 447/PHP 447. Signal Transduction
PHP 468. Introduction to Structure and Analysis of Biomolecules
PHP 550. Ion Channels and Disease
MBI 403. Drug Discovery
NSC 525. Biology of Neurological Diseases
PTH 510. Cell Biology of Human Disease II

Physiology

Robert T. Dirksen
Chair

John D. Lueck
PhD Program Co-Director

David M. MacLean
PhD Program Co-Director

Paul J. Kammermeier
MS Program Co-Director

Overview

The objective of the cellular and molecular physiology program is to provide a thorough understanding of basic physiology and to prepare graduates for careers as investigative pharmacologists and physiologists in academia, industry, government, or other careers. The PhD and MS degree programs include coursework in pharmacology, physiology, and the basic biomedical sciences, as well as seminar. The main component of the PhD program is original laboratory investigation in physiology within an affiliated lab. The PhD degree is awarded upon completion of scholarly work and research described in a publishable dissertation. Similarly, the main component of the Plan A MS degree is original laboratory research, although narrower in scope than PhD work. We also offer a Plan B MS degree that is focused on a comprehensive literature review of a particular topic.

The PhD and MS programs are hosted within the Department of Pharmacology and Physiology. Department faculty, fellows, students, and staff are dedicated to cutting-edge scientific research for a better understanding of how the human body functions and to alleviate diseases. Our department and program contain international leaders in multiple areas, including cardiovascular disease, vascular biology, cellular signaling, G-protein coupled receptors, ion channels, mitochondria, muscle biology and neurodegeneration, and neuropharmacology.

Learners in our programs generally work with several faculty mentors during their first-year rotations. This is an excellent opportunity to gain wide experience and appreciate different mentoring styles. Ultimately, learners select a single mentor (or occasionally co-mentors) with whom they conduct the majority of their work. However, through our coursework, seminar program, and general interactions within the department, learners are exposed to concepts, techniques, and active research questions in all these areas. Furthermore, our training environment features experts in multiple techniques, such as advanced microscopy, molecular biology, biochemistry, electrophysiology, animal behavior, and transcriptomics.

In addition, our program emphasizes improving scientific communication skills, both written and oral. Our curriculum includes specific courses on scientific communication as well as annual, or more frequent, presentations from students through the seminar program. This combination of foundational course work, experimental research training, and communication skills leaves our learners well prepared for their career goals. Graduates go on to academic postdocs and positions in industry and biotech startups.

Mission Statement and Strategic Goals

Our mission is to train and mentor the next generation of pharmacologists and physiologists and to position our learners to achieve their career goals within these disciplines. Our strategic goals are three-fold. First, we aim to provide instruction in foundational pharmacology and physiology concepts as well as the latest conceptual and technical developments. Second, we mentor our learners in developing critical thinking and experimental design skills as well as technical proficiency in laboratory science. Third, we emphasize written and oral communication skills so learners can effectively communicate their work..

https://www.urmc.rochester.edu/education/graduate/phd/pharmacology-and-physiology.aspx

Graduate Faculty Information

Douglas M. Anderson, PhD, *Arizona State University*
Assistant Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology

Bradford C. Berk, MD, PhD, *University of Rochester*
Professor
Distinguished University Professor; Director, Neurorestoration Institute
Primary Appointment(s): Medicine–Cardiology
Joint Appointment(s): Neurology, Pharmacology and Physiology

Jean M. Bidlack, PhD, *University of Rochester*
Professor
Associate Chair, Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Paul S. Brookes, PhD, *University of Cambridge*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Laura M. Calvi, MD, *Harvard University*
Professor
SKAWA Foundation Professor
Primary Appointment(s): Medicine–Endocrine/Metabolism
Joint Appointment(s): Pharmacology and Physiology

Chike Cao, PhD, *Rutgers University*
Assistant Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology

David A. Dean, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Ian M. Dickerson, PhD, *Purdue University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Thomas Diekwisch, DMD, PhD, *The Philipp University of Marburg*
Professor
Margaret and Cy Welcher Professorship in Dental Research; Chair, Oral and Craniofacial Sciences
Primary Appointment(s): Oral and Craniofacial Sciences, Eastman Institute for Oral Health
Joint Appointment(s): Periodontology, Pharmacology, and Physiology

Robert T. Dirksen, PhD, *University of Rochester*
Professor
Lewis Pratt Ross Professorship of Pharmacology and Physiology; Chair, Department of Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Scott Earley, PhD, *University of New Mexico*
Professor
Primary Appointment(s): Pharmacology and Physiology

Yumei Feng Earley, MD, *Zhejiang University;* PhD, *Chongqing University*
Professor
Primary Appointment(s): Medicine–Nephrology
Joint Appointment(s): Pharmacology and Physiology

Roman A. Eliseev, MD, *Russian State Medical University;* PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine

Megan Falsetta Wood, PhD, *University of Iowa*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Pharmacology and Physiology

Fabeha Fazal, PhD, *Aligarth Muslim University*
Associate Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Pharmacology and Physiology

Manoela V. Fogaça, PhD, *University of Sao Paulo*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Angela J. Glading, PhD, *University of Pittsburgh*
Associate Professor
Director, Medical Pharmacology Master's Program
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Biomedical Engineering, Pathology and Laboratory Medicine

Suzanne N. Haber, PhD, *Stanford University*
Professor
Dean's Professorship in Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience, Psychiatry

Stephen R. Hammes, MD, PhD, *Duke University*
Professor
Louis S. Wolk Distinguished Professorship in Medicine; Chief, Endocrine/Metabolism; Executive Vice Chair, Medicine
Primary Appointment(s): Medicine
Joint Appointment(s): Pharmacology and Physiology, Pathology and Laboratory Medicine , Microbiology and Immunology

Isaac S. Harris, PhD, *University of Toronto*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pharmacology and Physiology

Denise C. Hocking, PhD, *Albany Medical College*
Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Biomedical Engineering

J. Christopher Holt, PhD, *Tulane University*
Associate Professor
Primary Appointment(s): Otolaryngology
Joint Appointment(s): Neuroscience

Zheng-Gen Jin, PhD, *China*
Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

Gail V. W. Johnson, PhD, *University of Delaware*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Paul J. Kammermeier, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology

Minsoo Kim, PhD, *The Ohio State University*
Professor
Dean's Professorship in Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology, Center for Vaccine Biology and Immunology
Joint Appointment(s): Pharmacology and Physiology

Whasil Lee, PhD, *Duke University*
Associate Professor
Primary Appointment(s): Biomedical Engineering
Joint Appointment(s): Pharmacology and Physiology

John D. Lueck, PhD, *University of Rochester*
Associate Professor
Co-Director, Cellular and Molecular Physiology Program
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neurology

David M. MacLean, PhD, *McGill University*
Associate Professor
Paul Stark Professorship in Pharmacology; Co-Director, Cellular and Molecular Physiology Program
Primary Appointment(s): Pharmacology and Physiology

Julian Meeks, PhD, *Washington University*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pediatrics, Pharmacology and Physiology

Craig Morrell, PhD, *Johns Hopkins University;* DVM, *Tufts University School of Veterinary Medicine*
Professor
Dean's Professorship in Medicine; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine

Maiken Nedergaard, MD, *DMSc, University of Copenhagen*
Professor
Co-Director, Center for Translational Neuromedicine
Primary Appointment(s): Neurology
Joint Appointment(s): Pharmacology and Physiology, Neurosurgery

Keith W. Nehrke, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine, Nephrology
Joint Appointment(s): Pharmacology and Physiology

John Onukwufor, PhD, *University of Prince Edward Island*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Environmental Medicine

Cesare Orlandi, PhD, *University of Brescia*
Assistant Professor
Primary Appointment(s): Pharmacology and Physiology

Makaía Papasergi-Scott, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Pharmacology and Physiology

George A. Porter, Jr., MD, PhD, *University of Rochester*
Professor
Rhea and Raymond White Professorship in Pediatric Cardiology; Chief, Pediatric Cardiology
Primary Appointment(s): Pediatrics, Cardiology
Joint Appointment(s): Pharmacology and Physiology, Medicine–Aab Cardiovascular Research Institute

Arshad Rahman, PhD, *Aligarth Muslim University*
Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Pharmacology and Physiology

Eileen M. Redmond, PhD, *University College Dublin*
Professor
Primary Appointment(s): Surgery
Joint Appointment(s): Pharmacology and Physiology

Eric M. Small, PhD, *The University of Texas at Austin*
Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

Michel S. Telias, PhD, *Tel Aviv University*
Assistant Professor
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Neuroscience, Pharmacology and Physiology, Center for Visual Science

V. Kaye Thomas, PhD, *New York University*
Assistant Professor
Technical Director, Center for Advanced Light Microscopy and Nanoscopy
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Professor
Dean's Professorship in Neuroscience
Primary Appointment(s): Neuroscience
Joint Appointment(s): Pharmacology and Physiology

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Professor
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
Joint Appointment(s): Pharmacology and Physiology, Pediatrics

Andrew P. Wojtovich, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Houhui (Hugh) Xia, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

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Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute

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Associate Professor
Primary Appointment(s): Medicine–Aab Cardiovascular Research Institute
Joint Appointment(s): Biochemistry and Biophysics

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Associate Professor
Primary Appointment(s): Pathology and Laboratory Medicine
Joint Appointment(s): Pharmacology and Physiology

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Assistant Professor
Primary Appointment(s): Orthopedics, Center for Musculoskeletal Research
Joint Appointment(s): Pharmacology and Physiology, Biomedical Engineering

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Professor
Louis C. Lasagna Professorship in Experimental Therapeutics
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Center for Oral Biology, Medicine–Gastroenterology and Hepatology

Admissions

Applying to Doctoral Program

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Academics

Master's Degrees and Requirements

Required Courses Fall Semester

- Foundations in Modern Biology I
- Human Cell Physiology
- Ethics and Professional Integrity
- Pharmacology and Physiology Seminar*

Required Courses Spring Semester

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- Principles of Pharmacology
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- Cell Biology of Human Disease I
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- Ion Channels and Disease
- Drug Discovery
- Biology of Neurological Diseases
- Cell Biology of Human Disease II

Students may also request to take electives not on this list; however, this requires the approval of the physiology graduate committee.

We offer two research MS degree paths: Plan A and Plan B. The Plan A MS is focused on bench research, and students complete an original laboratory research project. Plan A MS completes at least one, but not more than three, laboratory rotations before selecting a lab and MS mentor with whom to conduct their studies. Plan A MS students are also required to present at least twice in PHP 502; the first is a literature review, and the second is the open component of their MS defense. Plan A students conduct a mentored research project, similar to a PhD thesis but much narrower in scope, write an MS dissertation, present their work in a public seminar, and defend it in a closed-door examination.

The Plan B MS degree focuses on literature research. Students complete a detailed assessment of primary scientific literature on a current or emerging topic of interest in physiology. In lieu of conducting lab rotations and practical experiments, Plan B students identify a mentor and, with the mentor's guidance, complete a master's essay that presents a critical review of a current physiology topic. They also present twice in PHP 502, which includes a public seminar and closed-door examination.

Doctoral Degrees and Requirements

Required Courses Spring Semester

- Foundations in Modern Biology I
- Human Cell Physiology
- Ethics and Professional Integrity
- Pharmacology and Physiology Seminar*

Required Courses Spring Semester

- Foundations in Modern Biology II (Module 1)
- Signal Transduction
- Principles of Pharmacology
- Effective Scientific Communication
- Pharmacology and Physiology Seminar*

Required Courses Summer Semester

- Statistical Rigor and Data Analysis

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- Cell Biology of Human Disease I
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- Introduction to Structure and Analysis of Biomolecules
- Ion Channels and Disease
- Drug Discovery
- Biology of Neurological Diseases
- Cell Biology of Human Disease II

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program, and meet with their dissertation committee at least annually. Prior to their PhD defense, students must have completed one semester as a teaching assistant or peer tutor and must have submitted at least one first author manuscript for publication.

Bioinformatics Concentration

PhD students are eligible to participate in a New York State certified Concentration in Bioinformatics. This entails coursework to be taken using elective slots in the core curriculum (or in addition to other electives). The coursework is specifically designed to provide theoretical and practical training in bioinformatics, supplementing the core curriculum. Students in this concentration will take two existing courses, one focused on programming and the other on statistical analysis of biological data. These students will also take part in an interactive seminar featuring discussion of cutting-edge topics in the field. Coursework requirements for the Bioinformatics concentration can be fulfilled anytime during a student's training, so long as they are complete by the time of graduation. Choosing to participate in a Concentration is a decision that should be made by the student in consultation with their Ph.D. research advisor and/or the Program Director.

GRADUATE COURSE TITLES

PHP 403. Human Cell Physiology
PHP 404. Principles of Pharmacology
PHP 405. Effective Scientific Communication
PHP 447. Signal Transduction
PHP 465. Introduction to Cell Mechanics and Mechanobiology
PHP 467. Statistical Rigor and Data Analysis
PHP 468. Introduction to Structure and Analysis of Biomolecules
PHP 491. Master's Readings
PHP 492. Master's Essay
PHP 495. Master's Research
PHP 496. Master's Lab Rotations
PHP 502. Pharmacology and Physiology Seminar
PHP 550. Ion Channels and Disease
PHP 595. PhD Research
PHP 596. PhD Lab Rotations
IND 426. Science Communication for Diverse Audiences
PHP 465. Introduction to Cell Mechanics and Mechanobiology
MBI 473. Immunology
BST 463. Introduction to Biostatistics
PTH 507. Cancer Biology
PTH 509. Cell Biology of Human Disease I
NSC 512. Cellular Neuroscience
CVS 401. Cardiovascular Biology and Disease
IND 447/PHP 447. Signal Transduction
PHP 468. Introduction to Structure and Analysis of Biomolecules
PHP 550. Ion Channels and Disease
MBI 403. Drug Discovery
NSC 525. Biology of Neurological Diseases
PTH 510. Cell Biology of Human Disease II

Public Health

Ann Dozier
Chair

Edwin van Wijngaarden
Associate Chair for Education

Christopher Seplaki
Program Director

Overview

The master's in public health degree (MPH) in the Department of Public Health Sciences is a 43-credit program accredited by the Council on Education for Public Health (CEPH). Our MPH program takes advantage of our unique setting within a leading school of medicine with its clinical research resources and collaborative faculty. Active faculty research programs encompass a range of areas, including behavioral interventions, environmental health, global health, health policy and outcomes, maternal and child health, medical decision making, nutrition, and aging. Our MPH program draws students from a wide mix of disciplines and backgrounds, who learn and grow in an academic environment that nurtures innovative scientific inquiry, intellectual discussion, diversity, and both personal and professional development. The MPH program has a longstanding tradition of training a diverse range of public health and health professionals in the skills needed to identify, prevent, and solve community health problems. Students completing the program will be well prepared for professional careers focused on public health practice and research in the public health and medical fields, as well as careers in private industry, government, and nonprofit agencies. Upon completion of the program, students will be able to:

- Use concepts and theories of public health in addressing specific population health concerns
- Formulate and answer questions related to population health improvement among diverse populations, using quantitative and qualitative evidence
- Work collaboratively to identify assets and problems, collect relevant data, and devise and evaluate programs.

The MPH program has two formats: the MPH online and the MPH online/on-campus hybrid. Both formats can be completed entirely online and do not require any on-campus presence. For that reason, international students are not eligible to obtain a visa for the MPH program of study, regardless of format.

The MPH online program format is ideal for international students because it can be completed entirely remotely. The MPH online/on-campus hybrid program format can also be delivered completely online, but students taking this format have an additional option for their Integrated Learning Experience (capstone) paper that includes in-person requirements. They also may choose elective courses that are held in person if they wish.

The advanced certificate in public health program is designed to provide individuals with knowledge and understanding of the key elements of public health practice.

The advanced certificate program aims to convey a working knowledge of the five key areas of public health practice: epidemiology, biostatistics, social and behavioral medicine, the U.S. health care system, and environmental epidemiology. The certificate is also designed to prepare qualified individuals to take the American Board of Public Health certification exam.

MPH: https://www.urmc.rochester.edu/education/graduate/masters-degrees/public-health.aspx

Advanced Certificate:
https://www.urmc.rochester.edu/education/graduate/certificate/advanced-certificate-in-public-health.aspx

Graduate Faculty Information

Paula Amina Alio, PhD, *University of Southern Florida*
Professor
Primary Appointment(s): Public Health Sciences

Robert Charles Block, MD, *New Jersey Medical School*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, Medicine–Cardiology

Shubing Cai, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Public Health Sciences

Erin Campbell, MD, *University at Buffalo*
Assistant Professor of Clinical Public Health Sciences
Primary Appointment(s): Public Health Sciences

Francisco Cartujano Barrera, PhD, *Seton Hall University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Cancer Center, Center for Community Health and Prevention

Ann M. Dozier, PhD, *University of Rochester*
Professor
Albert David Kaiser Chair of Public Health and Preventive Medicine
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Isabel D. Fernandez, PhD, *University of Minnesota*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Theresa Marie Green, PhD, *Western Michigan University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Nursing (SON), Center for Community Health and Prevention

Wyatte C. Hall, PhD, *Gallaudet University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Neurology, Obstetrics and Gynecology, Pediatrics, Center for Community Health and Prevention

Elaine L. Hill, PhD, *Cornell University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Economics (AS&E), Obstetrics and Gynecology

Todd A. Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Environmental Medicine

Yue Li, PhD, *University of Rochester*
Professor
Primary Appointment(s): Public Health Sciences

Yu Liu, PhD, *Vanderbilt University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Camille A. Martina, PhD, *University of Rochester*
Research Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine

Scott McIntosh, PhD, *University of Miami*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Cancer Center, Center for Community Health and Prevention, Dentistry, Orthopaedics

Mostafa Mohamed, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences

Reza Yousefi Nooraie, PhD, *McMaster University*
Associate Professor
Primary Appointment(s): Public Health Sciences

Deborah J. Ossip, PhD, *University of Pittsburgh*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention

Jose G. Perez-Ramos, PhD, *University of Rochester*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Pediatrics, Obstetrics and Gynecology, Center for Community Health and Prevention

David Rich, ScD, *Harvard University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine, Environmental Medicine

Christopher Seplaki, PhD, *University of Wisconsin–Madison*
Associate Professor
Director, Master of Public Health Program
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Psychiatry

James Tacci, MD, *University of Rochester;* JD, *Syracuse University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine Center of Nursing Entrepreneurship

Kelly N. Thevenet-Morrison, MS, *Rutgers University*
Lead Programmer Analyst
Primary Appointment(s): Public Health Sciences

Edith Williams, PhD, *University at Buffalo*
Professor
Dean's Associate Professorship
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine; Allergy, Immunology and Rheumatology; Center for Community Health and Prevention; Clinical and Translational Research

Edwin van Wijngaarden, PhD, *University of North Carolina at Chapel Hill*
Professor
Director, Career Development and Education, Institute for Human Health and the Environment; Associate Chair, Public Health Sciences
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics, Dentistry, Community Health and Prevention

Admissions

Applying to Master's Programs

Application to the MPH program is encouraged from people with a special interest or experience in the health field, from those in health-related professions, and from those with professional degrees in medicine and other fields related to health care. Candidates for admission to the program must have earned a baccalaureate degree or its equivalent.

Application Requirements

We expect all application materials (with the exception of official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

- SOPHAS application
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Three letters of recommendation
- Applicants whose native language is not English must demonstrate English proficiency by providing official scores within two years of the original test date. Acceptable test types: official TOEFL iBT or ITP Plus (SMD school code: 2948; SOPHAS application code: 5688), IELTS, and DuoLingo scores.
- CV or resume (optional)
- Research papers, publications, and other original works (optional)

Please do not include secondary school documentation or financial documentation, as these are not used during the admissions process. Application deadlines are May 1 for the fall semester and November 1 for the spring semester.

Applying to Advanced Certificates

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Application Requirements

We expect all application materials (with the exception of official score reports) to be scanned and uploaded to your online application. Please note that the University of Rochester reserves the right to verify the accuracy of all transcripts and to require submission of official documentation at any point in the admissions review process.

- Online application (recommended browser: Google Chrome)
- Statement of purpose
- Transcript(s) (please do not mail a hard copy)
- Official TOEFL (institution code: 2948) or IELTS score (if native language is not English)
- CV or resume
- Research papers, publications, and other original works for consideration (not required)

Please do not include secondary school documentation or financial documentation as these are not used during the admissions process. Application deadlines are May 1 for the fall semester and November 1 for the spring semester.

Academics

Master's Degree Requirements

The degree program comprises 43 credits, with the following required courses, plus three electives:

REQUIRED COURSES

IND 501. Ethics and Professional Integrity in Research (or another one-credit course)
PM 401. Quantitative Methods
PM 415. Principles of Epidemiology
PM 421. U.S. Health Care System: Financing, Delivery, and Performance
PM 426. Social and Behavioral Medicine
PM 445. Introduction to Health Services Research
PM 450. Community Health Applied Practice Experience
PM 455. Foundations in Public Health Sciences
PM 458. Qualitative Health Research
PM 500. Integrated Learning Experience
PM 461. Program Evaluation
PM 493. Health Policy Lab

Other graduate courses are listed below.

GRADUATE COURSE TITLES

PM 410. Introduction to Data Management and Analysis
PM 412. Survey Research
PM 413. Field Methods in Epidemiology
PM 414. History of Epidemiology
PM 416. Advanced Epidemiology Methods
PM 417. Molecular Epidemiology
PM 418. Cardiovascular Epidemiology and Prevention
PM 419. Recruitment and Retention of Human Subjects in Clinical Research
PM 420. American Health Policy and Politics
PM 422. Quality of Care and Risk Adjustment
PM 424. Epidemiology and Prevention of Chronic Disease
PM 426. Social and Behavioral Medicine
PM 430. Psychology in Health Services Research
PM 438. Grantsmanship
PM 442. Nutritional Epidemiology
PM 443. Foundations of Maternal and Child Health
PM 451. Infectious Disease Epidemiology
PM 464. Introduction of Regression Analysis
PM 466. Cancer Epidemiology
PM 469. Multivariate Models for Epidemiology
PM 470. Environmental and Occupational Medicine
PM 472. Measurement and Evaluation of Research Instruments
PM 484. Medical Decision Making and Cost Effectiveness Research
PM 485. Introduction to Biomedical Informatics
PM 486. Medical Ecology in Global Context
PM 488. Experimental Therapeutics
PM 489. Injury Epidemiology and Emergency Care Research Methods
PM 504. Environmental Health
PM 494. Reproductive Justice and Health Equity in the U.S.

Advanced Certificates and Requirements

The advanced certificate program is a post-baccalaureate course of academic study designed for students and practitioners who seek to enhance their professional development. Certificates consist of four or five courses for a total of 12 to 15 credits.

GRADUATE COURSE TITLES

PM 415. Principles of Epidemiology
PM 421. U.S. Health Care System: Financing, Delivery, and Performance
PM 426. Social and Behavioral Medicine
PM 455. Foundations in Public Health Sciences
PM 401. Quantitative Methods
PM 445. Introduction to Health Services Research
PM 461. Program Evaluation
PM 493. Health Policy Lab
PM 504. Environmental Health

Statistics

Robert L. Strawderman
Chair

Matthew N. McCall
PhD Program Director

Tong Tong Wu
MA Program Director

Overview

The Department of Biostatistics and Computational Biology offers programs leading to the master of arts (MA) and doctor of philosophy (PhD) in statistics. The non-thesis MA program can be completed in three semesters or, in some cases, one calendar year. The PhD program generally requires a minimum of four years of study, with five years being more common. PhD students may pursue a traditional program of study or the concentration in bioinformatics and computational biology.

The program interprets "statistics" very broadly, with specialization available in probability, statistical theory and analysis, biostatistics, and interdisciplinary areas of application. The curriculum is designed to give students a thorough grounding in statistical theory, which provides the necessary foundation for successful research in statistical methodology. The curriculum also gives students an appreciation for applied problems in biomedical research and the skills necessary to succeed in collaborative research environments. An important goal is to produce graduates with a command of technical skills and the ability and experience to use them appropriately.

Faculty participate fully in graduate teaching and give individual attention to each student through intensive advising. Program faculty have research interests and expertise in virtually all areas of modern theoretical and applied statistics. Faculty are involved in wide-ranging collaborative activity with basic science and clinical departments in the School of Medicine and Dentistry. This environment is ideally suited for training in research in statistical methodology, collaborative research, and consulting.

Mission Statement and Strategic Goals

Our mission is to educate and mentor the next generation of statisticians at the interface of methodological and collaborative statistical research. This happens in a diverse, equitable, and inclusive environment that provides them with the strong foundation in statistics necessary to secure leadership positions in academia, government, and industry.

https://www.urmc.rochester.edu/biostat/gradprograms.aspx

Graduate Faculty Information

Christopher Beck, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Orthopaedics, Center for Health and Technology

Changyong Feng, PhD, *University of Rochester*
Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Anesthesiology and Perioperative Medicine, Dentistry

Brent Johnson, PhD, *North Carolina State University*
Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Ophthalmology

Seong-Hwan Jun, PhD, *University of British Columbia*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology

Tanzy Love, PhD, *Iowa State University*
Associate Professor
Primary Appointment(s): Biostatistics and Computational Biology

Matthew McCall, PhD, *Johns Hopkins University*
Associate Professor
Director, PhD Statistics Program
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Biomedical Genetics

Michael McDermott, PhD, *University of Rochester*
Professor
Associate Chair, Biostatistics and Computational Biology
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Center for Health and Technology

Samuel Norman-Haignere, PhD, *Massachusetts Institute of Technology*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neuroscience, Biomedical Engineering

David Oakes, PhD, *London University*
Professor
Primary Appointment(s): Biostatistics and Computational Biology

Derick Peterson, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Wilmot Cancer Institute

Xing Qiu, PhD, *University of Rochester*
Professor
Primary Appointment(s): Biostatistics and Computational Biology

Michael Sohn, PhD, *University of Arizona*
Assistant Professor
Primary Appointment(s): Biostatistics and Computational Biology

Robert Strawderman, ScD, *Harvard University*
Professor
Donald M. Foster, MD Distinguished Professorship in Biostatistics; Chair, Biostatistics and Computational Biology
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Neurology, Center for Health and Technology

Sarah (Sally) Thurston, PhD, *Harvard University*
Professor
Biostatistics and Computational Biology Diversity and Inclusion Officer
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Environmental Medicine

Abdus Wahed, PhD, *North Carolina State University*
Professor
Associate Chair, Biostatistics and Computational Biology
Primary Appointment(s): Biostatistics and Computational Biology

Tong Tong Wu, PhD, *University of California, Los Angeles*
Professor
Director, MA Statistics Program; Director, MS Biostatistics Program
Primary Appointment(s): Biostatistics and Computational Biology

Admissions

Applying to Doctoral Programs

A candidate for admission to the PhD program should have a strong background in mathematics, including three semesters of calculus (through multivariable calculus), a course in linear and/or matrix algebra, and a year of probability and mathematical statistics. A course in real analysis is encouraged; a course in statistical methods is also recommended. While some background in biology may be helpful for pursuing certain avenues of research, it is not required for admission to the traditional statistics program. Basic courses in computer science and/or biology are recommended for students pursuing the concentration in bioinformatics and computational biology.

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Applicants must submit the following materials for consideration in their online application: statement of purpose, transcripts from all previous college and graduate programs, and three letters of recommendation. Most international applicants will also need to provide evidence of English proficiency (e.g., TOEFL, IELTS, or DuoLingo test score unless approved for a waiver). Applicants may choose to submit additional materials, such as a CV/resume and research papers.

Applicants will interview with at least three program faculty members before an admissions offer is recommended. Students are admitted to the PhD program as a whole, rather than to work directly with individual professors. Full-time study is required.

Students entering with advanced training in statistics, bioinformatics, or computational biology may transfer credits at the discretion of the PhD program director and in accordance with University policy.

Applying to Master's Programs

The requirements for application, admission, and entry into the terminal MA program are the same as those for the PhD unless otherwise indicated. Doctoral students are automatically and initially considered MA candidates.

Entering MA students should have a strong background in mathematics, including three semesters of calculus (through multivariable calculus), a course in linear and/or matrix algebra, and a year of probability and mathematical statistics. A course in real analysis is encouraged; a course in statistical methods is also recommended.

A request for part-time study in the MA program should be identified in the online application and will be subject to the MA program director's approval. Applicants interested in part-time study are encouraged to contact the department before submitting the application.

Applicants will interview with at least two program faculty members before an admissions offer is recommended. Students entering with advanced training in statistics may transfer credits

at the discretion of the MA program director and in accordance with University policy.

Current and eligible University of Rochester undergraduate students have the opportunity to pursue the MA degree through an accelerated option (4+1). Applications should be submitted before the end of the junior year to the Department of Biostatistics and Computational Biology. Accepted students may complete up to three graduate-level BST courses during their senior year that count towards both their Bachelor's degree and the MA in statistics degree. Students are assigned a biostatistics faculty advisor, in addition to their undergraduate academic advisor.

Academics

Master's Degrees and Requirements

The master of arts degree in statistics prepares students for both master's-level statistician work and doctoral programs. The MA degree requires satisfactory completion of at least 32 credits and a final comprehensive written examination. There are no thesis or language requirements. A balanced program is worked out with the MA program director. The typical program of study includes eight courses.

Required Courses

- Probability Theory
- Statistical Inference I
- Biostatistical Methods I
- Biostatistical Methods II
- Linear Models

Elective Courses (choose three)

- Introduction to Statistical Computing
- Statistical Inference II
- Bayesian Inference
- Design of Clinical Trials
- High Dimensional Data Analysis
- Generalized Linear Models

A typical full-time program for the MA consists of PhD-level courses taken in semesters one (three courses), two (three courses), and three (two courses); however, MA students have the option of completing the program in two semesters (four courses per semester). The final comprehensive examination is administered during the summer after the first year of study.

Students in the PhD program receive the MA degree upon satisfactory completion of the requirements for the degree.

Doctoral Degrees and Requirements

PhD Statistics (traditional program)

A program of study will be determined individually with the PhD program director. Students are required to take a minimum of 16 formal courses. Additional courses can be taken for audit or credit. PhD students are required to register for at least four semesters of Seminar in Statistical Literature, a one-credit course offering extensive practice in searching the statistical literature and preparing and delivering presentations. All PhD students are required to earn at least four credits of supervised teaching and/or supervised consulting and one credit of Ethics and Professional Integrity in Research. There is no foreign language requirement. Programming expertise is developed in the program.

Course work in statistics is concentrated in three areas: probability, inference, and data analysis. Beginning students should expect to spend all of their first year, most of their second year, and some of their third year taking formal courses. The balance of time is spent on reading and research.

Students take a comprehensive (basic) examination at the beginning of the second year and another written (advanced) exam at the beginning of the third year. Both cover material in the areas of probability, inference, and data analysis. PhD students receive the MA degree after passing the comprehensive (basic) examination and completing 32 credits of coursework.

After beginning research on a dissertation topic, PhD students take an oral qualifying examination, consisting largely of a presentation of a thesis proposal to a faculty committee, the student's thesis committee. Upon completion of the dissertation, doctoral candidates present their work at a public lecture followed by an oral defense of the dissertation before the thesis committee.

Students must spend 40 months to 66 months, not necessarily continuously, engaged in one or more of the following activities that enhance their education and skills as statisticians: teaching assistantship, research assistantship, participation on the statistical consulting rotation, and summer internships. Students are also expected to be the primary author on a peer-reviewed journal article submitted for publication before defending their PhD research.

PhD Statistics (concentration in bioinformatics and computational biology)

Formal course and examination requirements for students in the bioinformatics and computational biology (BCB) concentration are essentially the same as those for students in the traditional statistics program, with the main differences being in some required and elective courses related to bioinformatics and computational biology.

Students in the BCB concentration are required to take three courses related to bioinformatics and computational biology, while those courses are optional for students in the traditional statistics program. BCB concentration students are also required to answer certain questions related to one of these courses on the advanced examination. A student can switch from the BCB concentration to the traditional statistics program at any time, but students in the traditional statistics program can switch to the BCB concentration only before taking the advanced examination. Basic courses in computer science and/or biology are recommended for those applying to the BCB concentration.

Considerations for Students in the MD/PhD Program

Students admitted to the MD/PhD program follow essentially the same course of study as students in the PhD program, except

that coursework in statistics begins during the fall of the third year in the program. During the first year, students spend three months (June to August) with a mentor to begin the process of orientation toward research in statistical methodology. This is repeated during the second year of the program (March to August) just before the start of coursework. The main goals of these interactions are to give the student some insight regarding the process of research in statistical methodology and to facilitate the process of choosing a research advisor.

GRADUATE COURSE TITLES

BST 401. Probability Theory
BST 402. Stochastic Processes
BST 411. Statistical Inference I
BST 412. Statistical Inference II
BST 413. Bayesian Inference
BST 426. Linear Models
BST 430. Introduction to Statistical Computing
BST 432. High Dimensional Data Analysis
BST 433. Computational Systems Biology
BST 434. Genomic Data Analysis
BST 450. Data Analysis
BST 452. Design of Experiments
BST 461. Biostatistical Methods I
BST 462. Biostatistical Methods II
BST 463. Introduction to Biostatistics
BST 465. Design of Clinical Trials
BST 467. Applied Statistics in the Biomedical Sciences
BST 479. Generalized Linear Models
BST 487. Seminar in Statistical Literature
BST 511. Topics in Statistical Inference I
BST 512. Topics in Statistical Inference II
BST 513. Analysis of Longitudinal and Dependent Data
BST 514. Survival Analysis
BST 516. Causal Inference
BST 523. Advanced Bayesian Inference
BST 531. Nonparametric Inference
BST 536. Sequential Analysis
BST 541. Multivariate Analysis
BST 550. Topics in Data Analysis
BST 570. Topics in Biostatistics
BST 582. Introduction to Statistical Consulting
BST 590. Supervised Teaching
BST 591. Reading Course at the PhD Level
BST 592. Supervised Statistical Consulting
BST 595. Research at the PhD Level

Toxicology

B. Paige Lawrence
Chair, Environmental Medicine

Alison Elder
Co-Director, Toxicology PhD Program

Matthew Rand
Co-Director, Toxicology PhD Program

Overview

The Rochester Toxicology Training Program provides research training and career development support for graduate students and postdoctoral fellows who are seeking careers in toxicological and environmental health sciences. This program trains future scientists to apply critical thinking, communication, and investigative skills to identify and characterize the negative impacts of chemicals and other environmental stressors on human health and to resolve strategies for improving overall well-being. .

Mission Statement and Strategic Goals

Our goal is to prepare the next generation of talented, independent toxicologists and environmental health scientists to conduct innovative research and transform their findings into new information, resources, and tools that will be used by public health and medical professionals, as well as the public, to improve overall human health and well-being.

https://www.urmc.rochester.edu/education/graduate/phd/toxicology.aspx

Graduate Faculty Information

Jennifer Anolik, PhD, MD, *University of Rochester*
Professor
Associate Chair of Research, Medicine; Interim Chief, Division of Allergy, Immunology, and Rheumatology
Primary Appointment(s): Medicine–Allergy, Immunology, and Rheumatology
Joint Appointment(s): Pathology and Laboratory Medicine, Microbiology and Immunology

Olga Astapova, PhD, MD, *Wayne State University*
Assistant Professor
Primary Appointment(s): Medicine–Endocrinology, Diabetes and Metabolism

Laura Calvi, PhD, MD, *Harvard University*
Professor
SKAWA Foundation Professor in Endocrinology and Metabolism; Vice Chair, Basic and Translational Science, Department of Medicine
Primary Appointment(s): Medicine–Endocrinology, Diabetes and Metabolism
Joint Appointment(s): Cancer Center, Department of Pathology and Laboratory Medicine, Department of Pharmacology and Physiology

Deborah Cory-Slechta, PhD, *University of Minnesota*
Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience, Public Health Sciences

Lisa DeLouise, PhD, *Pennsylvania State University;* MPD, *Rochester Institute of Technology*
Associate Professor
Primary Appointment(s): Dermatology
Joint Appointment(s): Electrical and Computer Engineering

David Dean, PhD, *University of California, Berkeley*
Professor
Primary Appointment(s): Pediatrics, Neonatology

Alison Elder, PhD, *University of California, Irvine*
Associate Professor
Primary Appointment(s): Environmental Medicine

Fabeha Fazal, PhD, *Aligarh Muslim University*
Associate Professor
Primary Appointment(s): Pediatrics, Neonatology

Steve Georas, MD, *Brown University*
Professor
Walter & Carmina Mary Parkes Family Distinguished Professor
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
Joint Appointment(s): Environmental Medicine, Microbiology and Immunology

Todd Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics

Kirsi Jarvinen-Seppo, PhD, MD, *University of Helsinki*
Professor
Founders' Distinguished Professor of Pediatric Allergy
Primary Appointment(s): Pediatrics, Pediatric Allergy and Immunology
Joint Appointment(s): Medicine, Allergy/Immunology and Rheumatology, Microbiology and Immunology

Robert M. Kottmann, MD, *Jefferson Medical College*
Associate Professor
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine

B. Paige Lawrence, PhD, *Cornell University*
Professor
Wright Family Research Professor; Chair, Environmental Medicine
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Microbiology and Immunology

Ania Majewska, PhD, *Columbia University*
Professor
Dean's Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science

Margot Mayer-Pröschel, PhD, *University of Wurzburg*
Professor
Martha M. Freeman, MD, Professor in Biomedical Genetics
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Patrick J. Murphy, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Biology

M. Kerry O'Banion, PhD, MD, *University of Illinois*
Professor
Vice Chair, Neuroscience
Primary Appointment(s): Neuroscience
Joint Appointment(s): Neurology

Thomas G. O'Connor, PhD, *University of Virginia*
Professor
Wynne Distinguished Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neuroscience Obstetrics and Gynecology

John Onukwufor, PhD, *University of Prince Edward Island*
Research Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Environmental Medicine

Michael A. O'Reilly, PhD, *University of Cincinnati*
Professor
Primary Appointment(s): Pediatrics, Neonatology
Joint Appointment(s): Environmental Medicine

Gloria Pryhuber, PhD, MD, *SUNY Upstate College of Health Professions*
Professor
Primary Appointment(s): Pediatrics, Neonatology

Christoph Pröschel, PhD, *Oxford University*
Associate Professor
Primary Appointment(s): Biomedical Genetics

Arshad Rahman, PhD, *Aligarh Muslim University*
Professor
Primary Appointment(s): Pediatrics, Neonatology
Joint Appointment(s): Pharmacology and Physiology

Irfan Rahman, PhD, *University of Nagpur*
Professor
Dean's Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Public Health Sciences, Medicine–Pulmonary and Critical Care Medicine

Matthew Rand, PhD, *University of Vermont*
Associate Professor
Primary Appointment(s): Environmental Medicine

David Rich, ScD, MPH, *Harvard University*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Medicine–Pulmonary and Critical Care Medicine, Environmental Medicine

Jacques Robert, PhD, *University of Geneva*
Professor
Chair, Microbiology and Immunology; Albert and Phyllis Ritterson Professorship
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Environmental Medicine

Regina Rowe, PhD, MD, *Washington University, St. Louis University*
Assistant Professor
Primary Appointment(s): Pediatrics, Infectious Diseases

Souvarish Sarkar, PhD, *Iowa State University*
Assistant Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience

Marissa Sobolewski-Terry, PhD, *University of Michigan*
Assistant Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience

Martha Susiarjo, PhD, *Case Western Reserve University*
Associate Professor
Primary Appointment(s): Environmental Medicine

David Topham, PhD, *University of Vermont*
Professor
Marie Curran Wilson and Joseph Chamberlain Wilson Professor; Director, Translational Immunology and Infectious Diseases Institute
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Center for Vaccine Biology and Immunology

Andrew Wojtovich, PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine
Joint Appointment(s): Pharmacology and Physiology

Houhui Xia, PhD, *Stanford University*
Associate Professor
Primary Appointment(s): Pharmacology and Physiology
Joint Appointment(s): Neuroscience

Edwin van Wijngaarden, PhD, *University of North Carolina*
Professor
Associate Chair, Public Health Sciences
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Dentistry, Environmental Medicine, Center for Community Health and Prevention, Pediatrics

Admission

Applying to Doctoral Programs

The Toxicology Admissions Committee takes a holistic approach to assessing applicants. We recognize that the best way to achieve our mission of training the next generation of environmental health scientists is to harness the strengths of diversity in background, ability, and experience of all our trainees. The main criteria that we use to judge our applicants are research aptitude, experience, GPA range between 3 and 4, interpersonal skills, dependability, and leadership. We are specifically looking for applicants who have a commitment to the improvement of human health and well-being.

Graduate study at the University of Rochester School of Medicine and Dentistry means engaging in research and training that informs and shapes the world around us.

All applications to University of Rochester PhD programs are submitted online via a centralized admissions process. It is not necessary for you to contact individual faculty, although faculty are available to answer any questions you may have.

Application Requirements

- Online admissions application
- Statement of purpose
- Transcript
- Three letters of recommendation
- English proficiency documents (for applicants whose native language is not English)

You may submit the following optional materials if you feel these will be helpful in the admissions process:

- Writing sample – research papers, publications, and other original works
- CV or resume

Academics

Master's Degrees and Requirements

The Toxicology program awards an en passant MS degree in Toxicology to students upon successful completion of their qualifying examination, which must be taken by the second month of their third year.

Doctoral Degrees and Requirements

The Toxicology graduate curriculum consists of required core courses, seminars, and elective courses, as well as experimental research. As such, the PhD degree is awarded only after a student has conducted an independent, hypothesis-driven research project and written a dissertation that demonstrates a high level of intellectual competence.

The program requires 96 credit hours of combined didactic and research credits for completion. At least 30 graduate credit hours must be accumulated before taking the qualifying exam. The Toxicology Program offers two concentrations – in Cancer Biology and Bioinformatics – that require additional coursework.

GRADUATE COURSE TITLES

IND 431. Foundations in Modern Biology I
IND 432. Foundations in Modern Biology II
PHP 403. Human Cell Physiology
PHP 404. Principles of Pharmacology
TOX 521. Biochemical Toxicology
TOX 558. Toxicology Seminar
BST 467. Applied Biostatistics in the Biomedical Sciences
IND 501. Ethics and Professional Integrity in Research
TOX 597. Introduction to Faculty Research in Toxicology
TOX 501. Forensic Pathology for Toxicology
TOX 502. Forensic Toxicology
TOX 503/IND 403. Skin Toxicology and the Environment
TOX 510. Toxicology in Risk Assessment
TOX 527. Immunotoxicology
TOX 528. Gene-Environment Interactions in Toxicology
TOX 533. Neurotoxicology
TOX 564. Pulmonary Toxicology
IND 426. Science Communication for Diverse Audiences
PM 470. Environmental and Occupational Epidemiology
TOX 530. Reproductive and Developmental Toxicology

Translational Biomedical Science

Juilee Thakar
Program Director
Edwin van Wijngaarden
Associate Program Director

Overview

The translational biomedical science doctoral program aims to produce innovative, cross-trained, experienced researchers who contribute to the rapidly evolving needs of the U.S. clinical and translational science workforce. Our model of research experience is immersive and highly mentored. We emphasize transdisciplinary learning, independent career development planning, stackable research credentials, and a shared cooperative learning environment across the translational science spectrum. Our PhD program continuously adapts to shifting opportunities and discoveries in science, as well as to trends in educational strategies and skills. We serve the University's distinct multicultural, geographic, and multidisciplinary needs. We specifically focus on immersion in mentored research training and experience to engage communities not traditionally represented in science, and to provide formal degree credentials through innovative programming. The PhD in translational biomedical science is unique in that it is highly interdisciplinary. Each trainee works on different types of projects, and no two theses are alike. The current roster of mentors contains a wide breadth of expertise, allowing for trainees to receive an education unlike any other program. The knowledge that our trainees acquire throughout their time with us is based in translational science, translational research, basic science, team science, public health, biostatistics, ethics, and many other areas.

Mission Statement

The PhD program provides trainees with the skills essential to becoming an independent investigator in translational biomedical science by offering the highest quality of interdisciplinary training and in-depth mentoring in a multidisciplinary environment that fosters innovation, integrity, and productivity.

Strategic Goals

- Provide in-depth mentoring to ensure productive research training
- Teach fundamental theory and knowledge in the subject areas of biostatistics, epidemiology, laboratory methods, human subjects research, and analytical procedures essential to translational research
- Provide a critical environment fostering inquiry, integrity, teaching and communication skills, high productivity, and working in a multidisciplinary environment

https://www.urmc.rochester.edu/education/graduate/phd/translational-biomedical-science.aspx

Graduate Faculty Information

Jennifer Anolik, MD, PhD, *University of Rochester*
Professor
Primary Appointment(s): Medicine–Allergy/Immunology and Rheumatology
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine

Hani Awad, PhD, *University of Cincinnati*
Professor
Donald and Mary Clark Professor of Orthopaedics
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Biomedical Engineering

Jeevisha Bajaj, PhD, *National Centre for Biological Sciences, TIFR*
Assistant Professor
Primary Appointment(s): Biomedical Genetics

Jeffrey J. Bazarian, MD, *MPH, University of Rochester*
Professor
Primary Appointment(s): Emergency Medicine – Emergency Research Admin

Lisa Beck, MD, *Stony Brook University*
Professor
Lowell A. and Carol A. Goldsmith Professor in Dermatology
Primary Appointment(s): Dermatology
Joint Appointment(s): Pathology and Laboratory Medicine, Medicine–Allergy, Immunology, and Rheumatology

Paul S. Brookes, PhD, *UK-Cambridge U Med School*
Professor
Primary Appointment(s): Anesthesiology and Perioperative Medicine, Research
Joint Appointment(s): Pharmacology and Physiology

Darren Carpizo, MD, *University of Illinois;* PhD, *University of California, Los Angeles*
Professor
Primary Appointment(s): Surgery–Oncology
Joint Appointment(s): Wilmot Cancer Institute

Debrah Cory-Slechta, PhD, *University of Minnesota–Minneapolis*
Professor
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Neuroscience; Public Health Sciences

Lisa A. DeLouise, PhD, *Penn State University;* MPD, *Rochester Institute of Technology*
Associate Professor
Primary Appointment(s): Dermatology
Joint Appointment(s): Biomedical Engineering, Electrical and Computer Engineering

Stephen Dewhurst, PhD, *University of Nebraska*
Professor
Albert and Phyllis Ritterson Professorship; Vice Dean for Research, SMD; Associate VP for Health Sciences Research–Office of Senior VP for Research (UR)
Primary Appointment(s): Microbiology and Immunology

Robert T. Dirksen, PhD, *University of Rochester*
Professor
Chair, Pharmacology and Physiology; Lewis Pratt Ross Professorship of Pharmacology and Physiology
Primary Appointment(s): Pharmacology and Physiology

Paul Dunman, PhD, *University of Medicine and Dentistry of New Jersey*
Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Ophthalmology

Timothy Dye, PhD, *University at Buffalo*
Professor
Associate Chair for Research, Obstetrics and Gynecology
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Public Health Sciences, Pediatrics

Eli Eliav, DMD, PhD, *Hadassah Medical School (Israel)*
Professor
Primary Appointment(s): Department of Dentistry

Roman Eliseev, MD, *Russian State Medical University,* PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Pathology and Laboratory Medicine, Pharmacology and Physiology

Kevin Fiscella, MD, *Medical College of Virginia*
Professor
Primary Appointment(s): Family Medicine
Joint Appointment(s): Public Health Sciences, Center for Community and Health Prevention

John Foxe, PhD, *Albert Einstein College of Medicine*
Professor
Kilian J. and Caroline F. Schmitt Chair in Neuroscience; Research Director, The Ernest J. Del Monte Institute for Neuroscience
Primary Appointment(s): Neuroscience
Joint Appointment(s): Psychiatry, Center for Visual Science

Edward Freedman, PhD, *University of Pennsylvania*
Associate Professor
Primary Appointment(s): Neuroscience

Julie Fudge, MD, *Einstein College Medicine*
Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Psychiatry, Geriatric/Psychiatry

Steve Georas, MD, *Brown University*
Professor
Walter & Carmina Mary Parkes Family Distinguished Professorship
Primary Appointment(s): Medicine–Pulmonary and Critical Care Medicine
Joint Appointment(s): Microbiology and Immunology

Steven Gill, PhD, *Kansas State University*
Professor
Primary Appointment(s): Microbiology and Immunology

IIan Goldenberg, MD, *Israel-Sackler School of Medicine*
Professor
Primary Appointment(s): Medicine, Cardiology Heart Research

Vera Gorbunova, PhD, *Weismann Institute of Sciences*
Professor
Doris Johns Cherry Professor
Primary Appointment(s): Biology
Joint Appointment(s): Medicine–Geriatrics and Aging

Lauren Hablitz, PhD, *University of Alabama at Birmingham*
Assistant Professor
Primary Appointment(s): Neurology–Center for Translational Neuromedicine

Wyatte Hall, PhD, *Gallaudet University*
Assistant Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Center for Community Health and Prevention, Neurology, Obstetrics and Gynecology, Pediatrics–Neonatology

Stephen R. Hammes, MD, *PhD, Duke University School of Medicine*
Professor
Chief, Medicine – Endocrine/Metabolism; Executive Vice Chair, Medicine; Louis S. Wolk Distinguished Professorship in Medicine, Medicine – Endocrine/Metabolism
Primary Appointment(s): Medicine – Endocrine/Metabolism
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine, Pharmacology and Physiology

Isaac Harris, PhD, *University of Toronto*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pharmacology and Physiology

Kathi Heffner, PhD, *University of Nevada–Reno*
Professor
Primary Appointment(s): School of Nursing
Joint Appointment(s): Psychiatry, Medicine–Geriatrics and Aging

Elaine Hill, PhD, *Cornell University*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Economics, Obstetrics and Gynecology

Robert Holloway, MD, *University of Connecticut*
Professor
Chair, Neurology, Edward A. and Alma Vollertsen Rykenboer Chair in Neurophysiology
Primary Appointment(s): Neurology
Joint Appointment(s): Center for Health and Technology, Medicine–Palliative Care

Krystel Huxlin, PhD, *University of Sydney*
Professor
James V. Aquavella, MD Professorship in Ophthalmology; Director of Research, Ophthalmology
Primary Appointment(s): Ophthalmology
Joint Appointment(s): Center for Visual Science, Institute for Optics, Brain and Cognitive Sciences

Michelle Janelsins, PhD, *MPH, University of Rochester*
Professor
Gary R. Morrow Distinguished Professorship, Surgery Cancer Control
Primary Appointment(s): Surgery – Cancer Control
Joint Appointment(s): Cancer Center, Neuroscience

Kirsi Järvinen-Seppo, MD, PhD, *University of Helsinki*
Professor
Founders' Distinguished Professor of Pediatric Allergy
Primary Appointment(s): Pediatrics–Allergy/Immunology
Joint Appointment(s): Medicine–Allergy, Immunology, and Rheumatology; Microbiology and Immunology

Todd Jusko, PhD, *University of Washington*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics

Charles Kamen, PhD, *University of Georgia*
Associate Professor
Primary Appointment(s): Surgery–Cancer Prevention and Control
Joint Appointment(s): Psychiatry

Christopher Kanan, PhD, *University of California, San Diego*
Associate Professor
Primary Appointment(s): Computer Science

Minsoo Kim, PhD, *The Ohio State University*
Professor
Dean's Professorship in Microbiology and Immunology
Primary Appointment(s): Microbiology and Immunology, Center for Vaccine Biology and Immunology
Joint Appointment(s): Pharmacology and Physiology

Hartmut Land, PhD, *University of Heidelberg*
Professor
Chair, Biomedical Genetics; Robert and Dorothy Markin Professorship
Primary Appointment(s): Biomedical Genetics

B. Paige Lawrence, PhD, *Cornell University*
Professor
Wright Family Research Professorship
Primary Appointment(s): Environmental Medicine
Joint Appointment(s): Microbiology and Immunology

Dongmei Li, PhD, *The Ohio State University*
Professor
Primary Appointment(s): Clinical and Translational Research
Joint Appointment(s): Obstetrics and Gynecology, Public Health Sciences

Lynne E. Maquat, PhD, *University of Wisconsin-Madison*
Professor
Director, Center for RNA Biology – Office of VP for Health Sciences; J. Lowell Orbison Distinguished Service Alumni Professorship – Dean's Office
Primary Appointment(s): Biochemistry and Biophysics

Thomas Mariani, PhD, *Rutgers University*
Professor
David H. Smith Professor in Pediatrics
Primary Appointment(s): Pediatrics
Joint Appointment(s): Environmental Medicine, Biomedical Genetics

David H. Mathews, MD, *PhD, University of Rochester*
Professor
Lynne E. Maquat Distinguished Professor in Biochemistry and Biophysics
Primary Appointment(s): Biochemistry and Biophysics

Margot Mayer-Proschel, PhD, *University of Wurzburg*
Professor
Martha M. Freeman, MD Professor in Biomedical Genetics
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Neuroscience

Matthew N. McCall, PhD, *Johns Hopkins University*
Associate Professor
Director, Statistics PhD Program
Primary Appointment(s): Biostatistics

Matthew D. McGraw, MD, *SUNY Upstate of Health Professions*
Associate Professor
George Washington Goler Chair in Pediatrics
Primary Appointment(s): Pediatrics – Pulmonology

Scott McIntosh, PhD, *University of Miami*
Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Wilmot Cancer Institute, Center for Community Health and Prevention, Dentistry, Orthopaedics

James McMahon, PhD, *City University of New York*
Associate Professor
Endowed Chair for Innovation in Health Care; Co-Director for Dissemination and Implementation, Clinical and Translational Science Institute
Primary Appointment(s): School of Nursing

Benjamin L. Miller, PhD, *Stanford University*
Professor
Dean's Professorship in Dermatology
Primary Appointment(s): Dermatology
Joint Appointment(s): Biochemistry and Biophysics, Department of the Institute for Optics

Cynthia Monaco, MD, PhD, *University of Texas Southwestern Medical Center–Dallas*
Assistant Professor
Primary Appointment(s): Medicine
Joint Appointment(s): Microbiology and Immunology

Craig Morrell, DVM, *Tufts University;* PhD, *Johns Hopkins University*
Professor
Dean's Professorship–Medicine; Associate Director, Aab Cardiovascular Research Institute
Primary Appointment(s): Medicine
Joint Appointment(s): Microbiology and Immunology, Pathology and Laboratory Medicine

Joshua Munger, PhD, *University of Chicago*
Professor
Primary Appointment(s): Biochemistry and Biophysics
Joint Appointment(s): Microbiology and Immunology

Shawn Murphy, PhD, *Duke University*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Microbiology and Immunology

Jennifer Nayak, MD, *SUNY at Buffalo-School of Medicine and Biomedical Sciences*
Associate Professor
Primary Appointment(s): Pediatrics – Infectious Disease
Joint Appointment(s): Microbiology and Immunology

Maiken Nedergaard, MD, DMSc, *University of Copenhagen*
Professor
Co-Director, Neurology–Center for Translational Neuromedicine
Primary Appointment(s): NeurologyCenter for Translational Neuromedicine

Reza Yousefi Nooraie, PhD, *McMaster University*
Assistant Professor
Primary Appointment(s): Public Health Sciences

M. Kerry O'Banion, MD, PhD, *University of Illinois*
Professor
Primary Appointment(s): Neuroscience

Thomas O'Connor, PhD, *University of Virginia*
Professor
Wynne Distinguished Professor
Primary Appointment(s): Psychiatry
Joint Appointment(s): Neuroscience, Obstetrics and Gynecology

John Olschowka, PhD,*University of California, Davis*
Professor
Primary Appointment(s): Neuroscience

James Palis, MD, *University of Rochester*
Professor
Northumberland Trust Professorship in Pediatrics
Primary Appointment(s): Pediatrics - Hematology and Oncology
Joint Appointment(s): Pathology and Laboratory Medicine

Wilfred R. Pigeon, PhD, *Union Institute*
Professor
Primary Appointment(s): Psychiatry, Psychology

Erika Ramsdale, MD, *University of Kansas*
Associate Professor
Primary Appointment(s): Medicine–Hematology/Oncology

Cynthia Rand, MD, *Stony Brook University*
Professor
Primary Appointment(s): Pediatrics

Marlies Rossmann, MD, *Free University and Humboldt University, Germany,* PhD, *SUNY Stony Brook*
Assistant Professor
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Microbiology and Immunology

Fahad Saeed, MBBS, *Army Medical College-Pakistan*
Associate Professor
Primary Appointment(s): Department of Medicine, Nephrology; Public Health Sciences

Andrea Sant, PhD, *Washington University*
Professor
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Center for Vaccine Biology and Immunology

Kristin Scheible, MD, *University of Rochester*
Associate Professor
Primary Appointment(s): Pediatrics–Neonatology
Joint Appointment(s): Microbiology and Immunology

Edward Schwarz, PhD, *Albert Einstein Medical College*
Professor
Richard and Margaret Burton Distinguished Professor in Orthopaedics; Director, Center for Musculoskeletal Research
Primary Appointment(s): Orthopaedics–Center for Musculoskeletal Research
Joint Appointment(s): Urology, Medicine, Pathology and Laboratory Medicine, Biomedical Engineering, Microbiology and Immunology

Christopher Seplaki, PhD, *University of Wisconsin–Madison*
Associate Professor
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Psychiatry

Laurie Steiner, MD, *Mount Sinai Medical Center*
Professor
Primary Appointment(s): Pediatrics–Neonatology

Benjamin Suarez-Jimenez, PhD, *UK-University College London*
Associate Professor
Primary Appointment(s): Neuroscience
Joint Appointment(s): Center for Visual Science A&S

Juilee Thakar, PhD, *University of Wurzburg*
Associate Professor
Program Director, Translational Biomedical Science Doctoral Program
Primary Appointment(s): Microbiology and Immunology
Joint Appointment(s): Biostatistics and Computational Biology, Biomedical Genetics

Sally Thurston, PhD, *Harvard University*
Professor
Officer, Diversity and Inclusion
Primary Appointment(s): Biostatistics and Computational Biology
Joint Appointment(s): Environmental Medicine

Kimberly A. Van Orden, MD, *Florida State University*
Associate Professor
Primary Appointment(s): Psychiatry

Edwin van Wijngaarden, PhD, *University of North Carolina–Chapel Hill*
Professor
Director of Career Development and Education, Institute for Human Health and the Environment; Associate Chair, Public Health Sciences; Associate Director, Translational Biomedical Science Doctoral Program
Primary Appointment(s): Public Health Sciences
Joint Appointment(s): Environmental Medicine, Pediatrics, Dentistry, and Community Health and Prevention

Charles Venuto, PharmD, *University at Buffalo*
Associate Professor
Primary Appointment(s): Neurology–Center for Health and Technology

Paula M. Vertino
Professor
Wilmot Distinguished Professorship in Cancer Genetics; Senior Associate Dean, Basic Research
Primary Appointment(s): Biomedical Genetics
Joint Appointment(s): Pathology and Laboratory Medicine

Jin Xiao, DDS, *West China College of Stomatology;* PhD, *University of Rochester*
Associate Professor
Primary Appointment(s): Dentistry

Bridget Young, PhD, *Cornell University*
Assistant Professor
Primary Appointment(s): Pediatrics–Pediatric Allergy/Immunology
Joint Appointment(s): Public Health Sciences

Nicole A. Wilson, MD, *Rush Medical College at Rush University; PhD, Illinois Institute of Technology.*
Assistant Professor
Primary Appointment(s): Surgery, Pediatric Surgery
Joint Appointment(s): Biomedical Engineering, Pediatrics

Karen M. Wilson, MD, *MPH, University of Rochester*
Professor
Ruth A. Lawrence Professor in Pediatrics, Co-Director of the Clinical and Translational Science Institute
Primary Appointment(s): Pediatrics - Pediatric Hospitalist
Joint Appointment(s): Department of Public Health Sciences

Megan Wood, PhD, *University of Iowa*
Associate Professor
Primary Appointment(s): Obstetrics and Gynecology
Joint Appointment(s): Pharmacology and Physiology

Martin S. Zand, MD, PhD, *Northwestern University*
Professor
Senior Associate Dean for Clinical Research, Dean's Professorship in Medicine, Co-Director of the Clinical and Translational Science Institute
Primary Appointment(s): Medicine–Nephrology

Clive S. Zent, MD, MBBCH, *University of Witwatersrand*
Professor
Primary Appointment(s): Medicine–Hematology/Oncology

Admissions

Applying to Doctoral Programs

Candidates for admission to the translational biomedical science PhD program have foundational knowledge of the basic sciences and statistical methods. While not required, having this knowledge before starting the program can be pivotal for coursework during the first years of training. Background in statistical programming is also desirable.

Applicants must have earned a U.S. baccalaureate degree or its equivalent from a college, university, or technical school of acceptable standing. Students in their final year of undergraduate study may be admitted on the condition that their bachelor's degrees are awarded before they matriculate. Evidence of the earned degree is required before matriculation in the form of an official transcript noting degree conferral.

Applicants must submit the following materials for consideration in their online application: statement of purpose, copies of transcripts from all previous undergraduate and graduate training, and three letters of formal recommendation. International applicants must also provide evidence of English proficiency (e.g., TOEFL, IELTS, or DuoLingo test score), unless approved for a waiver. Applicants may choose to submit additional materials to aid in application review (such as a personal statement, academic manuscripts). GRE scores are optional.

Applicants chosen to advance to the second round of the admissions process interview with at least three faculty members. Once applicants are interviewed, offers of acceptance are made to finalists. Entrants to the PhD program do not need to secure a mentor or principal investigator before admittance because they complete laboratory rotations during the first year. Full-time study is required.

Trainees entering with advanced training or prior coursework may transfer up to 30 credits at the discretion of the program director, and in accordance with University and School of Medicine and Dentistry policy. Coursework eligible for transfer must have a minimum grade of B- and been completed within the last five years.

Academics

Doctoral Degrees and Requirements

The program and the trainee create a tentative program of study for the PhD at the beginning of program enrollment, and progress is tracked via annual summer meetings with program leadership. Coursework in translational biomedical science is

concentrated in five core areas: translational skills, translational science, basic science, public health, and biostatistics. Trainees are required to complete 12 core curriculum courses. They have the option to take either three general elective courses or declare a formal degree concentration (bioinformatics or clinical research methods). Trainees also take a one-credit TBS student seminar each semester of program enrollment to gain extensive practice in searching literature and preparing and delivering presentations. Core coursework should generally be completed by the end of the fifth semester of training. Additional courses can be taken for audit or credit.

Trainees complete three laboratory rotations with tenure-track faculty during the first year of training. They designate their primary research mentor by the end of the second semester and begin dissertation proposal research in preparation for the qualifying examination.

PhD trainees complete an oral qualifying examination during the fifth semester of training, which consists of a written proposal document, in the style of an NIH F or R award proposal, and presentation of the proposal to the trainee's dissertation committee. Trainees who successfully pass the exam qualify for doctoral degree candidacy. This PhD program does not offer an *en passant* master's degree after completion of the qualifying examination.

Students must receive permission to write the dissertation from the dissertation committee six months before defense. Upon completing and submitting the written dissertation, doctoral candidates present their work at a public lecture, followed by an oral defense before the dissertation committee.

PhD students can elect to complete a concentration in either bioinformatics or clinical research methods, two areas of strong interest for our trainees and affiliated program faculty.

Trainees in the bioinformatics concentration must take three courses related to bioinformatics and data analysis, whereas traditional trainees take general elective courses relating to their areas of research. Completion of the specified concentration courses results in doctoral degree with a concentration in bioinformatics.

Trainees in the computer science concentration must take three courses related to data mining, machine learning and artificial intelligence, whereas traditional trainees take general elective courses relating to their areas of research. Completion of the specified concentration courses results in doctoral degree with a concentration in computer science.

Trainees in the clinical research methods concentration take three courses related to clinical and populational research design and methods, whereas traditional trainees take generalized courses relating to their areas of research. Completion of the specified concentration courses results in a doctoral degree with a concentration in clinical research methods.

GRADUATE COURSE TITLES

IND 501. Ethics and Professional Integrity
PM 403. Research Team Science Seminar
IND 436. TBS Student Seminar
IND 439. Leadership Management for Scientists
IND 417. Workshop in Scientific Communications
IND 595. PhD Research
BST 465. Design of Clinical Trials
PM 485. Introduction to Biomedical Informatics
PM 487. Fundamentals of Science, Technology, and Health Policy
MBI 403. Drug Discovery
BME 431. FDA and Intellectual Property
BME 432. Navigating FDA Regulatory and Commercialization Landscapes
IND 431. Foundations of Modern Biology I
IND 432. Foundations of Modern Biology II
PM 415. Principles of Epidemiology
PM 426. Social and Behavioral Medicine
PM 445. Introduction to Health Services Research
PM 486. Medical Ecology in Global Context
PM 493. Health Policy Lab
BST 463. Introduction to Biostatistics
BST 467. Applied Biostatistics
DSCC 462. Computational Introduction to Statistics
IND 484. Current Topics in Bioinformatics Research
IND 419. Introduction to Quantitative Biology
BCH 521. Bioinformatics for Life Scientists
BIO 457. Applied Genomics
PM 410. Introduction to Data Management and Analysis
STAT 476. Statistical Computing in R
BST 432. High Dimensional Data Analysis
BST 434. Genomic Data Analysis
PM 413. Field Epidemiology
PM 416. Advanced Epidemiologic Methods
PM 419. Recruitment and Retention of Human Subjects in Clinical Research
PM 458. Qualitative Health Care Research

School of Nursing

Administrative Officers

Lisa Kitko, PhD, RN, FAHA, FAAN
Dean

Lisa A. Brophy, EdD, RN, MSBA, CNE
Associate Dean for Undergraduate Education

Carla A. DeLucia, EdD
Associate Dean for Academic and Student Success

John Eaves, MBA
Associate Dean for Finance and Operations

Sally Norton, PhD, RN, FNAP, FPCN, FAAN
Senior Associate Dean for Research

Overview

The School of Nursing offers a wide range of graduate degree options at the master's and doctoral levels as well as advanced certificates. With a pioneering history in advancing the nursing discipline, the SON is committed to providing transformational education to strengthen healthcare delivery and improve the nation's health in the new century. The result is our strategic commitment to build a culture of continuous learning that leverages a dynamic digital landscape featuring mobile and experiential learning. This creates active environments that are learner-centered and data-driven. In this rich milieu, learning occurs by doing, creating, and collaborating in a competency-driven curriculum. Students graduate prepared for lifelong learning and able to adapt in increasingly complex and interdependent healthcare environments. The vision of the SON is to lead the national agenda in transforming the discipline of nursing through innovative education, practice, and research to improve the health and well-being of individuals and communities.

The mission and vision of the SON is framed by the unification model, which directs nursing education, research, and practice. Unification is not only a philosophical approach but also an organizational structure that operationalizes the interdependence among education, research, and practice, forging a critical link between scientific discovery and improved healthcare outcomes. Education empowers nurses with knowledge, attitudes, and skills for leadership in professional practice and research. Research develops nursing knowledge to strengthen education and promote evidence-based practice from which new understandings and inquiry questions emerge. The essence of the model defines the interactive, integrated, and multidirectional relationship among our three missions: education, research, and practice. It supports and defines our school philosophy of the importance of each of our missions and how our missions are interdependent.

www.son.rochester.edu

Adult-Gerontology Acute Care Nurse Practitioner

Beth Palermo, DNP, RN, ANP-BC, ACNP-BC
Specialty Director

Overview

The Adult-Gerontology Acute Care Nurse Practitioner program prepares graduates to diagnose and treat adult and older adult patients in acute care settings. As an adult-gerontology acute care nurse practitioner, graduates deliver advanced nursing care to adult/older adult patients to help restore health, prevent complications, and navigate patients and their families across acute care settings. Nurse practitioners in this specialty help care for adult or older adult patients who are acutely ill or have conditions requiring complex chronic specialty care. Adult-gerontology acute care nurse practitioners typically practice in ICUs (cardiac, medical, surgical, trauma, neuromedicine), hospital inpatient floors, and outpatient specialty care clinics.

Program Learning Outcomes

- Create comprehensive plans of care for diverse populations based on the interrelationships among person, environment, health, and advanced-practice nursing.
- Evaluate the impact of social determinants on advanced-practice nursing interventions to promote, restore, and maintain mental and physical well-being.
- Demonstrate nurse practitioner role competence in providing safe, ethical, and compassionate person-centered care to patients and families through collaborative partnerships.
- Integrate theory, research, and informatics in the advanced care of patients and families
- Incorporate ethical and professional standards encompassing advocacy, policy, equity, leadership, and ongoing self-reflection into professional practice.
- Apply the principles of quality, safety, and collaboration to improve outcomes for patients, populations, communities, and systems.
- Synthesize knowledge from diverse sources and disciplines to develop, translate, and promote clinical scholarship.

Program Goals

- Providers base clinical care, decision-making, and clinical services on scientific evidence which is grounded in careful analysis of the unique needs of the individual, group, or population.
- Providers are actively engaged in scholarship through the clinical application of existing knowledge and the generation and dissemination of new clinical knowledge.
- Providers maintain competence in their specialty through formal and informal educational opportunities and specialty certification, and they promote the ongoing education of others.

https://son.rochester.edu/academics/masters/nurse-practitioner-programs/adult-gerontology-acute-care.html

Graduate Faculty Information

Carolanne Bianchi, DNP, RN, MBA, ANP, CRRN, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Susan W. Blaakman, PhD, RN, PMHNP-BC, FNAP, FAAN, *University of Rochester, School of Nursing*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Margaret Carno, PhD, MBA, MJ, RN, PNP-AC/PC, CNE, ATSF, FAAN, *University of Pittsburgh*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Research Subjects Review Board (RSRB)

Ying Meng, PhD, RN, ACNP, PhD, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Jamie L. Oliva, PhD, MS, RN, ANP-BC, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Wilmot Cancer Institute (URMC)

Elizabeth A. Palermo, DNP, RN, ANP-BC, ACNP-BC, *St. John Fisher University*
Assistant Professor of Clinical Nursing
Specialty Director, Adult-Gerontology Acute Care NP Program
Joint Appointment(s): Nursing Practice

Laura Paytash, DNP, RN, FNP-BC, *University of Rochester*
Senior Associate of Clinical Nursing
Primary Appointment(s): School of Nursing

Sukardi Suba, PhD, RN, PhD, *University of California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Timothy Thai, DNP, RN-BC, FNP-C, *Chatham University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): URMC Urgent Care

Amy Vierhile DNP, RN, PPCNP-BC, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Yang Yu, PhD, MPH, MSN, PhD, *University of Pittsburgh*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current Resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Applying to Master's Programs

Requirements

- Bachelor's degree from an accredited school or equivalent master's RN license-qualifying degree in nursing
- Minimum GPA of 3.0
- Minimum grade of C in undergraduate statistics
- One year of RN experience in acute care

Applying to Advanced Certificate Programs

Requirement

- Master's degree as an APRN from an accredited school of nursing
- Completion of the following courses* with a grade of C or above:
  - Advanced Pharmacology
  - Advanced Pathophysiology
  - Advanced Physical Assessment

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the master's degree program includes professional advanced-practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

NUR 467. Population Health in Theory and Practice
NPG 400. Evidence-Based Practice for Nurse Practitioners
NPG 402. Foundations and Professional Roles in Advanced Practice Nursing
NPG 404. Advanced Physiology and Pathophysiology
NPG 406. Advanced Pharmacology
NPG 410. Advanced Health Assessment
NPG 412. Diagnostic and Clinical Reasoning
NPG 414. Mental Health and Wellness in Acute and Primary Care
NUR 424. Adult Gerontology Acute Care Nurse Practitioner I
NUR 425. Adult Gerontology Acute Care Nurse Practitioner II

Clinical Nurse Leader

Maria A. Marconi, EdD, RN, CNE
Program Director

Overview

The Clinical Nurse Leader program prepares nurses to better understand the challenges and opportunities faced by the broader patient base and health care system. Students learn how to put evidence-based practice into action and expand their role as a leader. Nurses who earn a master's degree as a CNL become clinical leaders who work at the complex intersection of clinical care, population health, and health care management to focus on safety and quality.

Program Learning Outcomes

Lead high-performance interprofessional clinical teams to improve patient outcomes at all organizational levels.

- Engage in continuous review of healthcare systems to ensure evidence-based clinical care delivery across the organization.
- Leverage information technology to analyze risk and implement strategies to optimize patient care across organizational levels.
- Collaborate with interprofessional teammates to ensure seamless continuity for patients as they move through the healthcare system.
- Evaluate population health and disease prevention services to improve the health of individuals, families, and communities.
- Demonstrate leadership skills to promote advocacy efforts that include principles of social justice, diversity, equity, and inclusion.

Program Goals

- Prepare healthcare leaders to provide strategic and sustained direction, clear and visible values, and organizational environments that foster continuous improvement and enable success.
- Prepare healthcare leaders to support evidence-based practice and inquiry relevant to improving health and complex healthcare systems.
- Prepare healthcare leaders to create environments that foster innovation and continuous learning.

https://son.rochester.edu/academics/masters/clinical-nurse-leader-program/index.html

Graduate Faculty Information

Denise M. Burgen, DNP, MBA, MSN, RN, FNP, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Rebekah Greene, PhD, *University of Rhode Island*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Dwight Hettler, DNP, *RN, NE-BC, OCN, CNL, University of Rochester*
Instructor of Clinical Nursing
Additional Appointment(s): School of Nursing

James M. McMahon, PhD, *City University of New York*
Associate Professor of Clinical Nursing
Endowed Chair for Innovation in Health Care
Primary Appointment(s): School of Nursing

Christine E. Monahan, DC, *MS, BSN, RN, CDCES*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Rebecca R. Wolf, EdD, *University of Southern California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Chen Zhang, PhD, *MPH, PhD, Vanderbilt University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process.

Required Application Materials

- Current Resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and / or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Advanced Certificates and Master's Degrees Requirements

- Bachelor's degree from an accredited school or equivalent master's RN license-qualifying degree in nursing
- Minimum GPA of 3.0
- Minimum grade of C in undergraduate statistics
- RN licensure from New York State
- One year of clinical experience

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the Master's Degree Program includes professional advanced-practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

NLX 421. Physiology, Pathophysiology, and Pharmacology for Nurse Leaders and Educators
NLX 422. Health Assessment for Nurse Leaders and Educators
NUR 467. Population Health in Theory and Practice
NLX 470. Foundations of Health Care Leadership
NLX 473. Health Care Financial Management
NLX 475. Leadership in Clinical Nursing
NLX 476. Clinical Nurse Leader Immersion Experience
NLX 485. Clinical Nurse Leader Capstone
NLX 401. Foundations of Scholarly Writing for Healthcare Professionals
NLX 420. Theory and Evidence Based Practice for Nurse Educators and Nurse Leaders
NUR 564. Quality, Safety, and Informatics

Doctor of Nursing Practice

Susan M. Ciurzynski, PhD, RN-BC, PNP, VCE, FNAP
Interim Program Director

Overview

The Doctor of Nursing Practice (DNP) program is designed to prepare nurses at the highest level for advanced clinical practice and to meet the educational needs for the complexity of today's healthcare environment. Coursework will provide a strong foundation to accelerate evidence translation, critically appraise the practice environment, drive organizational change, and lead interprofessional approaches to achieve quality outcomes.

Program Learning Outcomes

- Integrate advanced nursing knowledge and specialty competencies in a defined area of nursing practice to deliver holistic, person-centered, equitable care across diverse populations.
- Synthesize theoretical and empirical knowledge from a variety of sources to lead a systematic investigation of an identified practice issue.
- Lead team-based interprofessional care with intentional collaboration and effective communication to foster a climate of mutual learning, respect, and shared values.
- Integrate information and communication technologies, as well as informatics processes to make data-driven decisions that improve outcomes and optimize healthcare delivery.
- Drive innovation as a systems thinker, change agent, and advocate to influence health policy, improve organizational performance, and advance health equity.
- Advance the nursing profession through professional identity formation, ethical practice, disciplinary knowledge development, and clinical scholarship.

Program Goals

Prepare diverse clinical scholars and practice leaders who transform healthcare delivery, optimize health outcomes for diverse populations, and generate practice knowledge to advance the discipline of nursing.

https://son.rochester.edu/academics/doctoral/doctor-nursing-practice-program/index.html

Graduate Faculty Information

Denise M. Burgen, DNP, MBA, MSN, RN, FNP,
University of Rochester
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Ann Leonhardt Caprio, DNP, *RN, ANP-BC, SCRN, FAHA,*

University of Rochester
Assistant Professor of Clinical Nursing
Additional Appointment(s): School of Nursing

Susan M. Ciurzynski, PhD, RN-BC, PNP, VCE, FNAP, *University of Rochester*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Meredith Kells, PhD, RN, CPNP, *Boston College*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Shannon K. Moreland, DNP, MS, RN, FNP, CEN, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Mary Susan Stanek, PhD, MSN/Ed, RN, *University of Rochester*
Assistant Professor of Clinical Nursing
Director, Center for Lifelong Learning
Primary Appointment(s): School of Nursing

Sukardi Suba, PhD, *RN, University of California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Meghan L. Underhill-Blazey, PhD, APRN, AOCNS, FAAN, *University at Buffalo*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Ying Xue, DNSc, RN, *Yale University*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Program Requirements

- Post-BS entry: Bachelor's degree from an accredited school of nursing
- Post-MS entry: Master's degree from an accredited school of nursing
- Minimum cumulative GPA of 3.0 from any undergraduate-level work and 3.5 from any
- graduate-level work
- RN licensure from New York State
- If applicable, national certification in your advanced-practice nursing specialty (preferred)
- Undergraduate statistics course with a grade of C or above
- English language proficiency

Academics

Students entering the DNP Program with a baccalaureate degree complete coursework and clinical hours that prepare them as nurse practitioners in their chosen specialty practice area or as clinical nurse leaders. Effective Fall 2024, post-MS DNP students with degrees from indirect care roles or other APRN tracks can enroll in the DNP program. Students entering the DNP program with a master's degree typically complete a full year of coursework (part-time; 2 courses/semester) before beginning the clinical practicum component of the DNP curriculum. Students graduate with a total of 1,000 post-baccalaureate clinical hours. Students complete a DNP scholarly project which involves the design, implementation, and evaluation of innovative initiatives to improve clinical practice and/or influence health policy. DNP scholarly projects are conducted independently during DNP practicum courses under the guidance of each student's DNP project team and in close collaboration with practice partners and mentors.

GRADUATE COURSE TITLES

NUR 467. Population Health in Theory and Practice
NUR 564. Quality, Safety, and Informatics
NUR 573. Leadership Skills for Interprofessional Collaborative Practice
NUR 509. Clinical Data Management (CDM) for the Doctor of Nursing Practice
NUR 571. Theoretical and Conceptual Foundations for Clinical Scholarship
NUR 572. Appraisal and Application of Evidence in Healthcare
NUR 574. Project Management for Systems Innovation
NUR 576. DNP Practicum I
NLX 473. Healthcare Financial Management
NUR 575. Health Policy Development and PoliticalChange
NUR 577. DNP Practicum II
NUR 578. DNP Practicum III

Family Nurse Practitioner

Marialaina Chennell, DNP, RN, FNP-C, NP-C, RNFA
Interim Co-Specialty Directors

Laura Paytash, MS, RN, FNP-BC, DNP
Interim Co-Specialty Directors

Overview

The Family Nurse Practitioner program prepares graduates to provide primary health care for patients from infancy through older adulthood, in addition to women's health care. Family nurse practitioners manage acute and chronic health problems, refer and coordinate care with specialists when needed, and counsel about healthy lifestyles. Nurse practitioners in this specialty approach individuals as part of a family system in the context of the community and are particularly skilled at improving access to high-quality care for medically underserved populations. They practice in a wide variety of settings, including community health centers, private practices, school-based health clinics, emergency departments, and urgent care centers.

Program Learning Outcomes

- Create comprehensive plans of care for diverse populations based on the interrelationships among person, environment, health, and advanced-practice nursing.
- Evaluate the impact of social determinants on advanced-practice nursing interventions to promote, restore, and maintain mental and physical well-being.
- Demonstrate nurse practitioner role competence in providing safe, ethical, and compassionate person-centered care to patients and families through collaborative partnerships.
- Integrate theory, research, and informatics in the advanced care of patients and families.
- Incorporate ethical and professional standards encompassing advocacy, policy, equity, leadership, and ongoing self-reflection into professional practice.
- Apply the principles of quality, safety, and collaboration to improve outcomes for patients, populations, communities, and systems.
- Synthesize knowledge from diverse sources and disciplines to develop, translate, and promote clinical scholarship.

Program Goals

- Providers base clinical care, decision-making, and clinical services on scientific evidence which is grounded in careful analysis of the unique needs of the individual, group, or population.
- Providers who are actively engaged in scholarship through the clinical application of existing knowledge and the generation and dissemination of new clinical knowledge.
- Providers who maintain competence in their specialty through formal and informal educational opportunities, and specialty certification, and who promote the ongoing education of others.

https://son.rochester.edu/academics/masters/nurse-practitioner-programs/family-nurse-practitioner.html

Graduate Faculty Information

Carolanne Bianchi, DNP, RN, MBA, ANP, CRRN, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Susan W. Blaakman, PhD, *RN, PMHNP-BC, FNAP, FAAN, University of Rochester, School of Nursing*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Margaret Carno, PhD, MBA, MJ, RN, CPNP, D,ABSM, FNAP, FAAN, *University of Pittsburgh*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Research Subjects Review Board (RSRB)

Maralaina Chennell, DNP, RN, FNP-C, NP-C, RNFA, *St. John Fisher University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Ying Meng, PhD, RN, ACNP, PhD, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Jamie L. Oliva, PhD, MS, RN, ANP-BC, *University of Rochester*
Associate Professor of Clinical Nursing (s)
Primary Appointment(s): School of Nursing
Joint Appointment(s): Wilmot Cancer Institute

Laura Paytash, DNP, RN, FNP-BC, *University of Rochester*
Senior Associate of Clinical Nursing
Primary Appointment(s): School of Nursing

Sukardi Suba, PhD, RN, PhD, *University of California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Timothy Thai, DNP, RN-BC, FNP-C, *Chatham University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): URMC Urgent Care

Amy Vierhile DNP, RN, PPCNP-BC, *University of Rochester*

Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Yang Yu, PhD, MPH, MSN, PhD, *University of Pittsburgh*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

Applying to Master's Degrees and Advanced Certificates

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current Resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Master's Program Requirements

- Bachelor's degree from an accredited school or equivalent master's RN license-qualifying degree in nursing
- Minimum GPA of 3.0
- Minimum grade of C in undergraduate statistics

Advanced Certificate Program Requirements

- Master's degree as an APRN from an accredited school of nursing
- Completion of the following courses* with a grade of C or above:
  - Advanced Pharmacology
  - Advanced Pathophysiology
  - Advanced Physical Assessment

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the master's degree program includes professional advanced-practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

NUR 467. Population Health in Theory and Practice
NPG 400. Evidence-Based Practice for Nurse Practitioners
NPG 402. Foundations and Professional Roles in Advanced Practice Nursing
NPG 404. Advanced Physiology and Pathophysiology
NPG 406. Advanced Pharmacology
NPG 410. Advanced Health Assessment
NPG 412. Diagnostic and Clinical Reasoning
NPG 414. Mental Health and Wellness in Acute and Primary Care
NUR 444. Primary Care NP I
NUR 445. Primary Care NP II

Leadership in Health Care Systems

Maria A. Marconi, EdD, RN, CNE
Program Director

Overview

The Leadership in Health Care Systems curriculum is broadly interdisciplinary with a focus on the "big picture" opportunities and challenges facing healthcare systems. Through hybrid coursework and a hands-on capstone project, students sharpen their skills as a manager or leader and learn best practices to ensure efficient, quality, and safe patient care delivery systems. Not only do graduates gain real-world management experience, but they forge invaluable professional relationships as well.

https://son.rochester.edu/academics/masters/leadership-health-care-systems-program/index.html

Program Learning Outcomes

- Lead effective high-performance interprofessional teams to meet high-reliability organizational goals in diverse healthcare environments.
- Demonstrate evidence-based leadership skills to facilitate trust and consensus building in diverse healthcare environments.
- Create cultures of diversity and inclusion by advocating for racial and social justice, health equity across diverse healthcare settings, and a health work environment which fosters attainment of a diverse workforce.
- Apply principles of continuous quality improvement in daily and strategic operations as a catalyst for change to optimize stakeholder outcomes in the presence of dynamic healthcare environments.
- Utilize economic, financial, and health outcomes data to support organizational decision-making, attainment of strategic goals, and effective operations in a variety of healthcare environments.

Program Goals

- Prepare healthcare leaders to provide strategic and sustainable leadership with clear and visible values and to create organizational environments that support optimal patient and faculty outcomes and high employee engagement.
- Prepare healthcare leaders to support evidence-based practice and inquiry relevant to improving health and complex healthcare systems.
- Prepare healthcare leaders to create environments that foster innovation and continuous learning.

Graduate Faculty Information

Irena Boyce, PhD, *University of Rochester*
Associate Professor of Clinical Nursing
Associate Vice President, Chief Improvement Officer URMC
Senior Director, UR Medicine Quality Institute, URMC

Denise M. Burgen, DNP, MBA, MSN, RN, FNP, *University of Rochester*
Assistant Professor
Primary Appointment(s): School of Nursing

Rebekah Greene, PhD, *University of Rhode Island*
Assistant Professor
Primary Appointment(s): School of Nursing

Christine E. Monahan, DC, *MS, BSN, RN, CDCES, New York Chiropractic College*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Joyce Smith, PhD, *RN, ANP, University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Rebecca R. Wolf, EdD, *University of Southern California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current Resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Master's Program Requirements

- Bachelor's degree from an accredited school or equivalent master's RN license-qualifying degree in nursing
- Minimum GPA of 3.0

- Minimum grade of C in undergraduate statistics
- One year of experience in the healthcare industry

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the master's degree program includes professional core courses and specialty courses. The professional core courses provide common substantive areas of study for students. Coursework provides specialty-specific, in-depth areas for study, including experiential learning experiences.

GRADUATE COURSE TITLES

NLX 419. Evidence-Based Practice for Health Care Leaders
NLX 464. Quality and Safety for the Health Care Leader
NLX 469. Project Management in Health Care
NLX 470. Foundations of Health Care Leadership
NLX 471. Trends in Health Economics, Policy, and Regulations
NLX 473. Health Care Financial Management
NLX 474. Human Resource Management
NLX 486. Leadership Capstone
NUR 467. Population Health in Theory and Practice
NLX 401. Foundations of Scholarly Writing for Healthcare Professionals

Master's Direct Entry into Nursing Practice

Luis Rosario-McCabe, DNP, RN, CNE, CNL, WHNP-BC, FNAP
Program Co-Director
Michael Rosario-McCabe, EdD, RN, CCM
Program Co-Director

Overview

The Master's Direct Entry into Nursing Practice (MDE) program offers an innovative path to RN licensure plus master's-level preparation—designed specifically for college graduates with non-nursing bachelor's degrees. This program provides a rigorous, efficient way for career changers to gain the credentials needed for a nursing career, with a focus on advanced competencies and leadership skills that open doors to a variety of academic and career opportunities. Graduates gain master's-level knowledge and enhanced skills in leadership and quality improvement to prepare for practice or future advanced nursing education. Master's-prepared nurses are well-positioned for nursing and healthcare leadership roles that offer a broader scope of responsibilities and higher pay, as well as a pathway to various academic and career opportunities, including Nurse Practitioner (NP), Clinical Nurse Leader (CNL), Nursing Education, doctoral programs, nursing leadership or healthcare quality roles, and other advanced nursing specialties.

Program Learning Outcomes

- Demonstrate competent clinical judgment in providing safe, effective, quality client care.
- Integrate communication tools, techniques, and technologies to enhance team functioning, well-being, and health outcomes for diverse populations.
- Create an environment that supports sharing diverse perspectives, interprofessional collaboration, and learning to promote quality patient care.
- Demonstrate integration of disciplinary knowledge, clinical appraisal of the best evidence, and client values in providing quality nursing care.
- Engage in self-assessment and reflective practice to improve professional performance in accordance with professional standards.
- Demonstrate leadership knowledge, skills, and abilities to advocate for promoting social justice and eradicating structural racism and systematic inequity in nursing and society.
- Use technology and information systems to enhance decision-making in complex healthcare delivery systems to optimize health outcomes.
- Examine the impact of determinants of health on client

care, health promotion, and disease prevention in diverse populations in multiple contexts across the lifespan.

- Integrate foundational knowledge of healthcare policy, finance, and regulatory environments and have the ability to act as a change agent in care delivery within a complex healthcare system.

Program Goals

- Successfully complete the National Council Licensure Examination.
- Gain employment in the clinical area of choice.

https://son.rochester.edu/academics/accelerated-nursing-programs/masters-direct-entry/index.html

Graduate Faculty Information

Lisa Brophy, EdD, RN, MSBA, CNE, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Associate Dean for Undergraduate Education
Additional Appointment(s): School of Nursing

Sarah Dunstan, DNP, RN-BC, AGPCNP-BC, *University of Rochester*
Instructor of Clinical Nursing
Additional Appointment(s): School of Nursing

Rebekah Greene, PhD, *University of Rhode Island*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Maren Reinholdt, PhD, MSN, RN, CNE, *Indiana University of Pennsylvania*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Luis A. Rosario-McCabe, DNP, RN, CNE, CNL, WHNP-BC, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Michael Rosario-McCabe, EdD, RN, CCM, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Tara M. Serwetnyk, EdD, RN, NPD-BC, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Robin L. Stacy, DNP, RN, FNP-C, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current resume or CV
- Transcripts of all prior college-level work
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

Program faculty conduct a holistic review of each application.

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the Master's Degree Program includes professional advanced practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

GNS 402. Ethics and Public Policy
GNS 460. Quality and Safety
GNS 465. Population and Community Health Nursing
GNS 470. Pathophysiology and Pharmacology for Nursing Practice
GNS 486. Graduate Symposium I
GNS 401. Principles and Application of Evidence for Nursing Practice
GNS 461. Foundations of Healthcare Leadership
GNS 473. Foundations in Nursing Practice
GNS 462. Nursing Health Assessment
GNS 472. Beginning Medical-Surgical Nursing
GNS 487. Graduate Symposium II
GNS 463. Diversity and Equity in Healthcare
GNS 474A. Nursing Care and Health Promotion for Childbearing Clients and Their Families
GNS 474B. Nursing Care and Health Promotion for Pediatric Clients and Their Families
GNS 475. Psychiatric/Mental Health Nursing
GNS 476. Intermediate Medical-Surgical Nursing
GNS 488. Graduate Symposium III
GNS 471. Management of Care
GNS 477. Advanced Medical Surgical Nursing
GNS 479. Capstone: Transition to Professional Nursing Practice
GNS 489. Graduate Symposium IV

Nursing Education

Maria A. Marconi, EdD, RN, CNE
Program Director

Overview

The Master's in Nursing Education program is designed for experienced working nurses who want to transition to a teaching role, either as a nurse educator or in patient safety and education. By earning a master's degree in nursing education, graduates can change their career path without changing careers, which will broaden opportunities for advancement and allow for a more regular work schedule. Students learn the proven methods and technologies of effective teaching through a series of hybrid courses (a blend of online and in-person) and then drive those lessons home through real-world interactions and observations.

https://son.rochester.edu/academics/masters/nursing-education-program/index.html

Program Learning Outcomes

- Function as educational leaders and change agents by advancing evidence-based teaching and learning practices and systems at the local, regional, and national level.
- Demonstrate scholarly inquiry of current evidence to drive change in clinical and academic practices.
- Implement learner-centered pedagogy in clinical and academic settings that facilitates learning to achieve desired cognitive, affective, and psychomotor outcomes.
- Apply educational leadership skills across intra/interprofessional teams to foster collaboration and transform clinical and academic nursing education.
- Contribute to the scholarship of nursing education through discovery, teaching, and integration.
- Promote social justice, inclusion, and equity in clinical, academic, and community settings.

Program Goals

- Prepare educational leaders who will model evidence-based practices in teaching and learning and interprofessional practice in academic, clinical, and community settings.
- Prepare educational leaders who are actively engaged in the scholarship of teaching and learning.
- Prepare educational leaders who will lead with integrity, demonstrating attainment of national nurse educator and graduate nursing education competencies.

Graduate Faculty Information

Kimberly L. Buholtz, EdD, MS, RN, CHSE, *University of Rochester*
Assistant Professor of Clinical Nursing
Assistant Director, Simulation
Primary Appointment(s): School of Nursing

Joseph Gomulak-Cavicchio, EdD, MSEd, *University of Rochester*
Assistant Professor of Clinical Nursing
ADA Access Coordinator
Primary Appointment(s): School of Nursing

Rebekah Greene, PhD, *University of Rhode Island*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Joy K. Lent, EdD, MSEd, BSN, RN-BC, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Maria A. Marconi, EdD, RN, CNE, *University of Rochester*
Assistant Professor of Clinical Nursing
Director, Master's Nursing Education and Health Care Leadership Programs
Primary Appointment(s): School of Nursing

Christine E. Monahan, DC, MS, BSN, RN, CDCES, *New York Chiropractic College*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Mary Susan Stanek, PhD, MSN/Ed, RN, *University of Rochester*
Assistant Professor of Clinical Nursing
Director, Center for Lifelong Learning
Primary Appointment(s): School of Nursing

Rebecca R. Wolf, EdD, *University of Southern California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.

- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Master's Program and Advanced Certificate Requirements

- Bachelor's degree from an accredited school
- RN licensure from New York State
- Minimum GPA of 3.0 from the relevant degree
- One year of clinical experience
- Minimum grade of C in undergraduate statistics

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the master's degree program includes professional advanced-practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

NLX 417. Teaching and Learning in Nursing
NLX 420. Theory and Evidence-Based Practice for Nurse Educators and Nurse Leaders
NLX 421. Physiology, Pathophysiology, and Pharmacology for Nurse Leaders and Educators
NLX 422. Health Assessment for Nurse Leaders and Educators
NLX 426. Curriculum Development and Course Design
NLX 427. Assessment and Evaluation in Nursing Education
NLX 430. Integrating Technology in Nursing Education
NLX 487. MNE Capstone
NLX 401. Foundations of Scholarly Writing for Healthcare Professionals
EDU 497. Teaching and Learning in Higher Education
EDU 581. Clinical Teaching in Health Care Professions Education: Teaching and Instructional Methods

Pediatric Nurse Practitioner – Acute Care

Margaret Ann Carno, PhD, MBA, MJ, RN, CPNP, D,ABSM, FNAP, FAAN
Interim Specialty Director

Overview

The Pediatric NP – Acute Care Advanced Certificate program prepares pediatric nurse practitioners trained in primary care to additionally care for children with acute, complex, critical, and chronic illnesses, disabilities, or injuries. Students who pursue this two-semester advanced certificate program will be well prepared to work in a variety of acute care settings, such as pediatric intensive care units, pediatric inpatient units, pediatric emergency rooms, pediatric urgent cares, pediatric trauma centers, and pediatric specialties such as cardiology, pulmonology, and neurology. The program — the first of its kind in New York State — focuses on caring for children of all ages and prepares students to deliver high-quality advanced nursing care that restores health, prevents complications, and assists patients and families in navigating rapidly changing acute healthcare environments. Upon graduating from the program, students will be prepared to sit for the acute care pediatric nurse practitioner certification exam (CPNP-AC).

Program Learning Outcomes

- Create comprehensive plans of care for diverse populations based on the interrelationships among person, environment, health, and advanced practice nursing.
- Evaluate the impact of social determinants on advanced practice nursing interventions to promote, restore, and maintain mental and physical well-being.
- Demonstrate nurse practitioner role competence in providing safe, ethical, and compassionate person-centered care to patients and families through collaborative partnerships.
- Integrate theory, research, and informatics in the advanced care of patients and families.
- Incorporate ethical and professional standards encompassing advocacy, policy, equity, leadership, and ongoing self-reflection into professional practice.
- Apply the principles of quality, safety, and collaboration to improve outcomes for patients, populations, communities, and systems.
- Synthesize knowledge from diverse sources and disciplines to develop, translate, and promote clinical scholarship.

Program Goals

- Providers base clinical care, decision-making, and clinical services on scientific evidence which is grounded in careful

analysis of the unique needs of the individual, group, or population.
- Providers are actively engaged in scholarship through the clinical application of existing knowledge and the generation and dissemination of new clinical knowledge.
- Providers maintain competence in their specialty through formal and informal educational opportunities and specialty certification and promote the ongoing education of others.

https://son.rochester.edu/academics/advanced-certificate-programs/pnp-acute-care.html

Graduate Faculty Information

Margaret Carno, PhD, MBA, MJ, RN, PNP-AC/PC, CNE, ATSF, FAAN, *University of Pittsburgh*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Research Subjects Review Board (RSRB)

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:
- Current resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Advanced Certificate Program Requirements
- Minimum GPA of 3.0
- Minimum grade of C in undergraduate statistics
- Master's degree as an APRN from an accredited school of nursing
- Completion of the following courses* with a grade of C or above:
  - Advanced Pharmacology
  - Advanced Pathophysiology
  - Advanced Physical Assessment

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the master's degree program includes professional advanced-practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

NUR 433. Pediatric Acute Care NP I
NUR 434. Pediatric Acute Care NP II

Pediatric Nurse Practitioner/Neonatal Nurse Practitioner

Patrick Hopkins, DNP, APRN, C-PNP, NNP
Specialty Director

Overview

The Pediatric/Neonatal Nurse Practitioner program prepares students to provide advanced nursing care for low- and high-risk neonates and infants. Preparation in both pediatric and neonatal nurse practitioner specialties enables students to provide primary or acute care to infants in a variety of settings.

Nurse practitioners in the pediatric and neonatal specialties will be able to practice at all levels of neonatal inpatient care, including transport, acute, and chronic care; in delivery rooms; and in outpatient settings, with the majority practicing in neonatal intensive care units (NICU) across the country.

Students conduct clinical experiences at the Gosnell Family Neonatal Intensive Care Unit at Golisano Children's Hospital. The highly specialized, nationally recognized center provides the highest level of care available for sick or premature newborns (level IV), including advanced treatment for respiratory failure, heart disease, and neurologic injury.

Program Learning Outcomes

- Create comprehensive plans of care for diverse populations based on the interrelationships among person, environment, health, and advanced-practice nursing.
- Evaluate the impact of social determinants on advanced-practice nursing interventions to promote, restore, and maintain mental and physical well-being.
- Demonstrate nurse practitioner role competence in providing safe, ethical, and compassionate person-centered care to patients and families through collaborative partnerships.
- Integrate theory, research, and informatics in the advanced care of patients and families.
- Incorporate ethical and professional standards encompassing advocacy, policy, equity, leadership, and ongoing self-reflection into professional practice.
- Apply the principles of quality, safety, and collaboration to improve outcomes for patients, populations, communities, and systems.
- Synthesize knowledge from diverse sources and disciplines to develop, translate, and promote clinical scholarship.

Program Goals

- Providers base clinical care, decision-making, and clinical services on scientific evidence which is grounded in careful analysis of the unique needs of the individual, group, or population.
- Providers are actively engaged in scholarship through the clinical application of existing knowledge and the generation and dissemination of new clinical knowledge.
- Providers maintain competence in their specialty through formal and informal educational opportunities and specialty certification and promote the ongoing education of others.

https://son.rochester.edu/academics/masters/nurse-practitioner-programs/pediatric-neonatal.html

Graduate Faculty Information

Erin S. Baylor, DNP, RN, PNP-BC, ONP, CHSE, *Chatham University*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Carolanne Bianchi, DNP, RN, MBA, ANP, CRRN, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Susan W. Blaakman, PhD, RN, PMHNP-BC, FNAP, FAAN, *University of Rochester, School of Nursing*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Margaret Carno, PhD, MBA, MJ, RN, PNP-AC/PC, CNE, ATSF, FAAN, *University of Pittsburgh*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Research Subjects Review Board (RSRB)

Patrick Hopkins, DNP, APRN, C-PNP, NNP, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Ying Meng, PhD, RN, ACNP, PhD, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Jamie L. Oliva, PhD, MS, RN, ANP-BC, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Wilmot Cancer Institute

Laura Paytash, DNP, RN, FNP-BC, *University of Rochester*
Senior Associate of Clinical Nursing
Primary Appointment(s): School of Nursing

Sukardi Suba, PhD, RN, PhD, *University of California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Timothy Thai, DNP, RN-BC, FNP-C, *Chatham University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): URMC Urgent Care

Amy Vierhile DNP, RN, PPCNP-BC, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Yang Yu, PhD, MPH, MSN, PhD, University of Pittsburgh
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Applying to Advanced Certificates

Eligibility

- Bachelor's degree in nursing from an accredited school or equivalent master's RN license-qualifying degree in nursing
- Minimum GPA of 3.0
- Master's degree as an APRN from an accredited school of nursing
- Two years' NICU experience in the last five years

Academics

Advanced Certificates and Master's Degrees Requirements

The Pediatric Neonatal Nurse Practitioner Program prepares master's degree and advanced certificate students to provide advanced nursing care for low- and high-risk neonates and infants. The program combines pediatric and neonatal nurse practitioner specialties, preparing graduates to provide both primary and acute care to infants in a variety of settings. Nurse practitioners in the pediatric and neonatal specialties will be able to practice in all levels of neonatal inpatient care, transport, acute and chronic care; delivery rooms, and outpatient settings, with the majority practicing in neonatal intensive care units (NICU) across the country.

GRADUATE COURSE TITLES

NUR 400. Research Principles for Evidence-Based Practice
NUR 401. Foundations of Scholarly Writing in the Health Professions
NUR 403. Ethics and Public Policy in the Health Care System
NUR 407. Advanced Physiology and Pathophysiology
NUR 410. Advanced Health Assessment
NUR 419. Advanced Pharmacology
NUR 435. Pediatric Psychopharmacology
NUR 436. Nursing Care of the High-Risk Neonate
NUR 437. Pediatric Primary Care I
NUR 438. Pediatric Primary Care II
NUR 439. Pediatric Primary Care III

Pediatric Nurse Practitioner

Erin S. Baylor, DNP, RN, PNP-BC, ONP, CHSE
Specialty Director

Overview

The Pediatric Nurse Practitioner program prepares students to provide advanced care to children of all ages. As a pediatric nurse practitioner, graduates care for children across the health continuum, from healthy children to those with acute and chronic health problems. They perform well-child care and developmental screening, treat common childhood illnesses, and provide anticipatory guidance for children and parents. Nurse practitioners in this specialty provide health care to children across all healthcare settings, including primary care offices, school-based health centers, hospital and specialty practices, and pediatric emergency departments. Pediatric nurse practitioners are also prepared to address the many behavioral health issues faced in pediatric primary care, including ADHD, bullying, and risk-taking behaviors.

Program Learning Outcomes

- Create comprehensive plans of care for diverse populations based on the interrelationships among person, environment, health, and advanced-practice nursing.
- Evaluate the impact of social determinants on advanced-practice nursing interventions to promote, restore, and maintain mental and physical well-being.
- Demonstrate nurse practitioner role competence in providing safe, ethical, and compassionate person-centered care to patients and families through collaborative partnerships.
- Integrate theory, research, and informatics in the advanced care of patients and families.
- Incorporate ethical and professional standards encompassing advocacy, policy, equity, leadership, and ongoing self-reflection into professional practice.
- Apply the principles of quality, safety, and collaboration to improve outcomes for patients, populations, communities, and systems.
- Synthesize knowledge from diverse sources and disciplines to develop, translate, and promote clinical scholarship.

Program Goals

- Providers base clinical care, decision-making, and clinical services on scientific evidence which is grounded in careful analysis of the unique needs of the individual, group, or population.
- Providers are actively engaged in scholarship through the clinical application of existing knowledge and the generation and dissemination of new clinical knowledge.
- Providers maintain competence in their specialty through formal and informal educational opportunities and specialty certification and promote the ongoing education of others.

https://son.rochester.edu/academics/masters/nurse-practitioner-programs/pediatric.html

Graduate Faculty Information

Carolanne Bianchi, DNP, RN, MBA, ANP, CRRN, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Susan W. Blaakman, PhD, RN, PMHNP-BC, FNAP, FAAN, *University of Rochester, School of Nursing*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Margaret Carno, PhD, MBA, MJ, RN, PNP-AC/PC, CNE, ATSF, FAAN, *University of Pittsburgh*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Research Subjects Review Board (RSRB)

Ying Meng, PhD, RN, ACNP, PhD, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Jamie L. Oliva, PhD, MS, RN, ANP-BC, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Wilmot Cancer Institute

Laura Paytash, DNP, RN, FNP-BC, *University of Rochester*
Senior Associate of Clinical Nursing
Primary Appointment(s): School of Nursing

Sukardi Suba, PhD, RN, PhD, *University of California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Timothy Thai, DNP, RN-BC, FNP-C, *Chatham University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): URMC Urgent Care

Amy Vierhile DNP, RN, PPCNP-BC, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Yang Yu, PhD, MPH, MSN, PhD, *University of Pittsburgh*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Applying to Master's Programs

Requirements

- Bachelor's degree from an accredited school or equivalent master's RN license-qualifying degree in nursing
- Minimum GPA of 3.0
- Minimum grade of C in undergraduate statistics

Applying to Advanced Certificates

Requirements

- Master's degree as an APRN from an accredited school of nursing
- Completion of the following courses* with a grade of C or above:
  - Advanced Pharmacology
  - Advanced Pathophysiology
  - Advanced Physical Assessment

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the master's degree program includes professional advanced-practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

NUR 467. Population Health in Theory and Practice
NPG 400. Evidence-Based Practice for Nurse Practitioners
NPG 402. Foundations and Professional Roles in Advanced Practice Nursing
NPG 404. Advanced Physiology and Pathophysiology
NPG 406. Advanced Pharmacology
NPG 410. Advanced Health Assessment
NPG 412. Diagnostic and Clinical Reasoning
NPG 414. Mental Health and Wellness in Acute and Primary Care
NUR 438. Pediatric Primary Care II
NUR 439. Pediatric Primary Care III

PhD in Nursing and Health Science

Marie Flannery, PhD, RN
Program Director

Overview

The PhD in Nursing and Health Science program consists of four components: core courses in research and theory building, courses individually selected to support the student's research interests, research and teaching assistant experiences, and the dissertation. The program content is directed toward the formulation and testing of theory; the designs, methods, and tools for conducting research on topics related to health and illness; and the development and critique of scientific and humanistic knowledge appropriate to the care of people in health and illness. The PhD program research training process builds upon clinical expertise at the master's level.

Program Learning Outcomes

- Critically evaluate existing knowledge and theoretical orientations to formulate significant research questions.
- Conduct (inclusive of design, implementation, and interpretation) rigorous, ethically sound health research.
- Demonstrate fluency in the range of theoretical approaches and philosophical underpinnings used in nursing practice and health research.
- Evidence expertise in the breadth of the discipline and in-depth knowledge in a specific area of science.
- Advocate for improvements in practice, policy changes, and health equity based on a growing expertise in a substantive area.
- Disseminate the results of work through avenues such as scholarly manuscripts and presentations.
- Engage in multidisciplinary scientific inquiry, representing disciplinary perspectives.
- Contribute to university, local community, and/or regional or national organizations.
- Engage learners using innovative and evidence-based teaching strategies.

Program Goals

- Scientists who generate meaningful knowledge for health and health care using rigorous design and methodology
- Expert scholars who disseminate their work to advance healthcare practice, theory, and/or policy
- Evolving leaders who steward their professions through engagement in education, service, and mentorship

https://son.rochester.edu/academics/doctoral/phd-nursing-program

Graduate Faculty Information

Mary G. Carey, PhD, RN, FAHA, FAAN, *University of California*
Professor of Nursing in Clinical Nursing
Primary Appointment(s): Nursing Practice
Joint Appointment(s): School of Nursing

Marie A. Flannery, PhD, RN, *University of Rochester*
Associate Professor of Clinical Nursing
Director, PhD Program in Nursing and Health Science
Primary Appointment(s): School of Nursing

Susan Groth, PhD, WHNP-BC, FAANP, *University of Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Lisa Kitko, PhD, RN, FAHA, FAAN, *The Pennsylvania State University*
Professor of Nursing
Dean, School of Nursing
Primary Appointment(s): School of Nursing

Natalie Leblanc, PhD, MPH, RN, BSN, *University of Miami*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

James M. McMahon, PhD, *City University of New York*
Associate Professor of Clinical Nursing
Endowed Chair for Innovation in Health Care
Primary Appointment(s): School of Nursing

Ying Meng, PhD, RN, ACNP, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Sally A. Norton, PhD, RN, FNAP, FPCN, FAAN, *University of Wisconsin*
Professor of Clinical Nursing
Senior Associate Dean for Research
Primary Appointment(s): School of Nursing

Meghan L. Underhill, PhD, APRN, AOCNS, FAAN, *University at Buffalo*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Ying Xue, DNSc, RN, *Yale University*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Chen Zhang, PhD, MPH, *Vanderbilt University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least three letters are required for doctoral applicants. Letters of recommendation are managed on the online application.
- English proficiency scores for non-native English speakers
- Application fee
- Professional goal statement and writing sample

After the application is initially reviewed, candidates will be contacted to schedule an interview with a School of Nursing faculty member. A holistic review of each individual application is conducted by the faculty in the program.

PhD Program Requirements

- Master's degree from an accredited school
- Minimum cumulative GPA of 3.5 from any graduate-level work
- Clinical licensure in a health profession

Academics

The program begins with 2–3 years of intensive full-time coursework which becomes increasingly specialized based on planned research directions and individual clinical or teaching tracks. Cognate courses are chosen with the assistance of the advisor to advance students to the cutting edge of their chosen research area. All students complete a total of 360 hours of RA/TA work. The qualifying exam is administered after students complete required core coursework and demonstrates students are prepared to advance to candidacy, undertake independent research, and begin the dissertation.

After completing their coursework, the written dissertation proposal is developed by the student and revised in response to critique by their dissertation advisory committee. When the proposal is judged ready for defense, the student prepares a public presentation of the proposed research, which is followed by a critique and oral defense conducted in private with the dissertation committee. Additional changes in the written proposal may be requested at that time.

Once the proposal has been successfully defended and research review board approval has been secured, the student conducts the dissertation research project independently under guidance of the committee. The final dissertation is then written, revised with critique from the committee, and presented publicly, followed by a private defense.

GRADUATE COURSE TITLES

NUR 507. Research Appraisal and Synthesis
NUR 508. Writing and Publishing in the Health Sciences
NUR 510. Applied Statistics I
NUR 511. Basic Principles of Quantitative Research Design
NUR 512. Applied Statistics II
NUR 513. Research Measurement
NUR 514. Research Integration and Proposal Development
NUR 515. Philosophical and Theoretical Foundations of Scientific Inquiry in Health Care Science
NUR 518. Advanced Qualitative Research Design and Methods
NUR 555. Basic Principles of Qualitative Research Design
NUR 569. Dissertation Seminar
NUR 590. Dissertation Workshop
NUR 595. PhD Research
NUR 995. Continuation of Doctoral Enrollment
NUR 999. Doctoral Dissertation

Psychiatric Mental Health Nurse Practitioner

Susan W. Blaakman, PhD, RN, PMHNP-BC, FNAP, FAAN
Specialty Director

Overview

The Psychiatric Mental Health Nurse Practitioner Across the Lifespan program prepares students to provide mental health care to individuals of all ages. As a psychiatric mental health nurse practitioner, graduates are prepared to provide access to vital mental health services across the health care continuum. They develop expertise in assessment, diagnosis, psychotherapy, and psychopharmacology management of mental health challenges and psychiatric disorders. Nurse practitioners in this specialty provide mental health services in acute and community-based settings, including inpatient and outpatient settings, chemical dependency programs, school-based programs, and private practice. In addition to traditional psychiatric settings, psychiatric mental health nurse practitioners are also located in primary care and acute medical settings working to expand the efforts of behavioral health integration.

Program Learning Outcomes

- Create comprehensive plans of care for diverse populations based on the interrelationships among person, environment, health, and advanced-practice nursing.
- Evaluate the impact of social determinants on advanced-practice nursing interventions to promote, restore, and maintain mental and physical well-being.
- Demonstrate nurse practitioner role competence in providing safe, ethical, and compassionate person-centered care to patients and families through collaborative partnerships.
- Integrate theory, research, and informatics in the advanced care of patients and families.
- Incorporate ethical and professional standards encompassing advocacy, policy, equity, leadership, and ongoing self-reflection into professional practice.
- Apply the principles of quality, safety, and collaboration to improve outcomes for patients, populations, communities, and systems.
- Synthesize knowledge from diverse sources and disciplines to develop, translate, and promote clinical scholarship.

Program Goals

- Providers base clinical care, decision-making, and clinical services on scientific evidence which is grounded in careful analysis of the unique needs of the individual, group, or population.
- Providers are actively engaged in scholarship through the clinical application of existing knowledge and the generation and dissemination of new clinical knowledge.
- Providers maintain competence in their specialty through formal and informal educational opportunities and specialty certification and promote the ongoing education of others.

https://son.rochester.edu/academics/masters/nurse-practitioner-programs/family-nurse-practitioner.html

Graduate Faculty Information

Carolanne Bianchi, DNP, RN, MBA, ANP, CRRN, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Susan W. Blaakman, PhD, RN, PMHNP-BC, FNAP, FAAN, *University of Rochester, School of Nursing*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Margaret Carno, PhD, MBA, MJ, RN, PNP-AC/PC, CNE, ATSF, FAAN, *University of Pittsburgh*
Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Research Subjects Review Board (RSRB)

Beth Heaney, DNP, PMHNP-BC, *Rush University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Nursing Practice

Ying Meng, PhD, RN, ACNP, PhD, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Jamie L. Oliva, PhD, MS, RN, ANP-BC, *University o/Rochester*
Associate Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): Wilmot Cancer Institute

Laura Paytash, DNP, RN, FNP-BC, *University of Rochester*
Senior Associate of Clinical Nursing
Primary Appointment(s): School of Nursing

Sukardi Suba, PhD, RN, PhD, *University of California*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Timothy Thai, DNP, RN-BC, FNP-C, *Chatham University*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing
Joint Appointment(s): URMC Urgent Care

Amy Vierhile, DNP, RN, PPCNP-BC, *University of Rochester*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Yang Yu, PhD, MPH, MSN, PhD, *University of Pittsburgh*
Assistant Professor of Clinical Nursing
Primary Appointment(s): School of Nursing

Admissions

The School of Nursing uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents:

- Current resume or CV
- Transcripts of all prior college-level work
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's and advanced certificate applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- Current RN license
- English proficiency scores for non-native English speakers
- Application fee
- Short answer responses and essay

After the application is reviewed, the candidate will be contacted to schedule an interview with a School of Nursing faculty member. Program faculty conduct a holistic review of each application.

Applying to Master's Programs

Requirements

- Bachelor's degree from an accredited school or equivalent master's RN license-qualifying degree in nursing
- Minimum GPA of 3.0
- Minimum grade of C in undergraduate statistics

Applying to Advanced Certificates

Requirements

- Master's degree as an APRN from an accredited school of nursing
- Completion of the following courses* with a grade of C or above:
  - Advanced Pharmacology
  - Advanced Pathophysiology
  - Advanced Physical Assessment

Academics

Graduate study at the UR SON integrates nursing practice, education, and research. The curriculum for the master's degree program includes professional advanced-practice nursing core courses and clinical specialty courses. The professional core courses provide common substantive areas of study for students. Clinical specialty courses provide specialty-specific, in-depth areas for study, including clinical and experiential learning experiences.

GRADUATE COURSE TITLES

NUR 467. Population Health in Theory and Practice
NPG 400. Evidence-Based Practice for Nurse Practitioners
NPG 402. Foundations and Professional Roles in Advanced Practice Nursing
NPG 404. Advanced Physiology and Pathophysiology
NPG 406. Advanced Pharmacology
NPG 410. Advanced Health Assessment
NPG 412. Diagnostic and Clinical Reasoning
NPG 414. Mental Health and Wellness in Acute and Primary Care
NPG 450. Theoretical Foundations for the PMHNP
NPG 451. Psychiatric-Mental Health Assessment and Diagnoses
NPG 452. Pathophysiology and Psychopharmacology of Mental Health Disorders Across the Lifespan
NUR 457. Practicum in Advanced Family Psychiatric Mental Health Nurse Practitioner Role II
NUR 458. Practicum in Advanced Family Psychiatric Mental Health Nurse Practitioner Role III

Simon Business School

Administrative Officers

Mitch Lovett
Interim Dean

Jim Brickley
Senior Associate Dean of Faculty and Research

Ron Goetter
Interim Senior Associate Dean of Education and Innovation

Ravi Mantena
Interim Associate Dean of Education and Innovation

Committee on Graduate Studies

The PhD Committee (composed of faculty from the major areas of the school) is responsible for all aspects of the PhD program. These duties include admissions, annual review of each student's progress, awarding of fellowships and assistantships, and program evaluation (curriculum, core exams, qualifying exams, second-year paper, third- and fourth-year seminars).

The Graduate Curriculum Committee (GCC) consists of faculty members (tenure-track and clinical) from the major areas of the school, plus as ex-officio members, the senior associate dean of faculty and research, the senior associate dean of education and innovation, and other administrative representatives. The GCC oversees Simon's full-time and part-time MBA programs, as well as specialized master's degree programs in finance, accountancy, medical management, business analytics, marketing analytics, AI in business, and business analytics & applied AI. It also oversees the corresponding advanced certificates of achievement for those programs. It is as an umbrella committee for the individual program committees for the MBA and MS programs. Its primary responsibility is to evaluate proposals made by program committees regarding possible negative or positive impacts on other programs.

School Mission Statement

The Simon Business School develops business leaders who have an exceptional level of clarity about business and about themselves. We achieve this through research and teaching focused on analytics and economics, and by being home to a tight-knit community that is among the most diverse of any business school.

School-Level Graduate Awards

PhD Program

- Simon PhD Fellowship, given to all students at the time of admission
- The Professor Prem Chand Jain Simon Doctoral Award: Provides an additional stipend support of $5,000 for applicants from India and surrounding countries

We do not have any teaching awards for our PhD students.

Master's Degree Programs

Scholarships and Fellowships

- Mark Ain Scholarship
- Baycross Christian Family Foundation Scholarship
- Joseph and Mary Bell Scholarship
- Rosmarie Brunner Scholarship
- Chesonis Scholarship
- The Consortium for Graduate Study in Management Fellowship
- Gregory B. Cuvelier GEC Scholarship
- Ethel V. Drummond Endowed Fellowship in Business Administration
- Fielding Leadership Fellowship
- Florescue Fellowship
- Forté Fellowship
- Gleason Fellowship
- Goldman Sachs Scholarship
- Donald R. and James N. Goodenough Memorial Scholarship
- Pramit S. Jhaveri George Eastman Circle Scholarship

- Gary P. Johnson Endowed Scholarship
- Evans Lam George Eastman Circle Scholarship for Simon Business School
- Meliora Fellowship
- Thaminda Ramanayake '07M (MS), '10S (MBA) George Eastman Circle Scholarship
- Reaching Out LGBT MBA Fellowship
- Sue and David Reh Endowed Scholarship
- Marilyn and Michael Rosen Endowed Scholarship
- Professor G. William Schwert Scholarship
- Stephen and Barbara Shepard Endowed Scholarship
- Simon Games Scholarship
- Simon Women's Alliance Scholarship
- Singh Family Scholarship
- Dennis and Evangeline Soter Scholarship
- Vineet Suchanti (MBA94) George Eastman Circle Scholarship
- Amy and Robert Tait Scholarship
- Tock Siong Tan '04S (MBA) Scholarship
- Professor Ross L. Watts Endowed Scholarship
- Janice and Joseph Willett Endowed Scholarship
- Mark A. Zupan Scholarship Fund

Awards

- John M. Brophy Award: Awarded to the graduating part-time student who has the highest record of academic achievement in the MBA program
- Karl Brunner Award: Awarded to the non-US graduating student who has the highest record of academic achievement in the MBA program
- Elizabeth S. Hansen Award: Awarded to the graduating student who has the highest grade point average in the MS program
- Philip T. Meyers Scholarship Award: Awarded to the U.S. graduating full-time student who has the highest record of academic achievement in the MBA program

Executive MBA

Ravi Mantena
EMBA Faculty Director

Mission Statement and Strategic Goals

Gain the tools you need to become a more decisive and dynamic leader while cultivating the analytical thinking for which Simon is known. Our Executive MBA program features career resources, professional development opportunities, and global immersion projects to create a truly transformative leadership experience. The program's high-flex format allows you to complete the program online or with a combination of online and in-class learning—making going back to school more manageable.

https://www.simon.rochester.edu/programs/emba

Graduate Faculty Information

Kristina Brecko, PhD, *Stanford University*
Assistant Professor

James Brickley, PhD, *University of Oregon*
Professor
Senior Associate Dean, Faculty and Research
Gleason Professor of Business Administration

Dan Burnside, MBA, *University of Rochester*
Clinical Professor

Hana Choi, PhD, *Duke University*
Assistant Professor

Roberto Colangelo, MA, *State University of New York*
Executive Professor

Paul Ellickson, PhD, *Massachusetts Institute of Technology*
Professor
Michael and Diane Jones Professor of Business Administration

Ron Goettler, PhD, *Columbia University*
Professor
James N Doyle Professor of Entrepreneurship; Interim Senior Associate Dean of Education and Innovation

Harry Groenevelt, PhD, *Columbia University*
Associate Professor

Avery Haviv, PhD, *University of Toronto*
Associate Professor

Yufeng Huang, PhD, *Tilberg University*
Associate Professor

Glenn Huels, MBA, *Rochester Institute of Technology*
Clinical Associate Professor

Tim Hungerford, MS, *Rochester Institute of Technology*
Clinical Associate Professor

Sudarshan Jayaraman, PhD, *University of North Carolina at Chapel Hill*
Professor
Wesray Professor of Business Administration

Roy Jones, PhD, *Stanford University*
Clinical Professor

Joseph Kalmenovitz, PhD, *New York University*
Assistant Professor

Ron Kaniel, PhD, *University of Pennsylvania*
Professor
Jay S. and Jeanne P. Benet Professor of Finance

Daniel Keating, MBA, *University of Rochester*
Clinical Associate Professor

Dennis Kessler, JD, *Northwestern University*
Clinical Professor

Narayana Kocherlakota, PhD, *University of Chicago*
Professor
Lionel W. McKenzie Professor of Economics
Appointment(s): College of Arts and Sciences

Alexandr Kopytov, PhD, *University of Pennsylvania*
Assistant Professor

Yukun Liu, PhD, *Yale University*
Assistant Professor
William H. Meckling Assistant Professor of Business Administration

Amanda Lohiser, PhD, *State University of New York at Buffalo*
Clinical Assistant Professor

Mitchell Lovett, PhD, *Duke University*
Professor
Interim Dean, Benjamin Forman Professor of Marketing

Mikhail Lysyakov, PhD, *University of Maryland*
Assistant Professor

Ravindra N. Mantena, PhD, *New York University*
Clinical Professor
Janice M. and Joseph T. Willett Professor of Business Administration for Teaching and Service; Interim Associate Dean of Education and Innovation; MBA Faculty Director

Andras Miklos, PhD, *Central European University*
Clinical Associate Professor

Jeanine Miklos-Thal, PhD, *University of Toulouse*
Professor
Fred H. Gowen Professor of Economics and Management

Derek Mohr, JD, *Case Western Reserve University*
Clinical Associate Professor

Liza Mohr, MA, *University of Rochester*
Clinical Associate Professor

Alan Moreira, PhD, *University of Chicago*
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Ricky Roet-Green, PhD, *Tel Aviv University*
Associate Professor

Zach Roth, MBA, *University of Rochester*
Clinical Assistant Professor

Huaxia Rui, PhD, *The University of Texas at Austin*
Professor
Xerox Professor of Computers and Information Systems

John Schloff, MBA, *Pepperdine University*
Executive Professor

Greg Shaffer, PhD, *Princeton University*
Professor
Olin Professor

Paul Shanahan, JD, *Albany Law School of Union University*
Executive Professor

Yaron Shaposhnik, PhD, *Massachusetts Institute of Technology*
Assistant Professor

Thomas Shaw, MFA, *Emerson College*
Executive Professor

Jonathan Shipley, PhD, *Texas A&M University*
Clinical Assistant Professor

Carol Shuherk, PhD, *University of Oregon*
Clinical Professor

Takeaki Sunada, PhD, *University of Pennsylvania*
Assistant Professor

Teck Yong Tan, PhD, *Columbia University*
Assistant Professor

David Tilson, PhD, *Case Western Reserve University*
Clinical Professor

Vera Tilson, PhD, *Case Western University*
Associate Professor

Heidi Tribunella, MS, *SUNY Polytechnic Institute*
Clinical Professor

Giulio Trigilia, PhD, *Warwick University*
Assistant Professor

Charles Wasley, PhD, *University of Iowa*
Professor
Joseph and Janice Willett Distinguished Scholar

Gerard Wedig, PhD, *Harvard University*
Associate Professor

Joanna Wu, PhD, *Tulane University*
Professor
Susanna and Evans Y. Lam Professor

Tianli Xia, PhD, *University of Wisconsin-Madison*
Assistant Professor

Billy Xu, PhD, *Rice University*
Assistant Professor

Sevin Yeltekin, PhD, *Stanford University*
Professor
Dean, Frontier Communications/Rochester Telephone Professor of Business Administration

Pavel Zryumov, PhD, *Stanford University*
Assistant Professor

Admissions

Required Application Materials

- Online application form
- Current resume
- Two required essays (250–500 words)
- College transcripts
- Two professional references
- Optional: GMAT or GRE test results
- Optional: Video essay

Preferred Candidate Profile

Managers preparing for the next phase of their career, promoting change in their organization, increasing their business performance, or redefining their personal goals. 10–15 years of experience preferred. Simon's Executive MBA is a non-visa-sponsoring program.

If you have less work experience or prefer in-person study, explore Simon's Professional MBA program.

GMAT/GRE

Simon offers the option to apply without a GMAT/GRE/Executive Assessment score.

Academics

Master's Degree and Requirements

The Simon Executive MBA has been specifically designed to help you, the working professional, no matter what your career objectives may be. The unique lockstep curriculum sequence moves you through the initial foundational tools and functional knowledge before culminating in strategic application. There are 15 required courses, three electives, plus two complementary courses available to customize your study. Executive MBA students meet each Wednesday and two Saturdays per month.

GRADUATE COURSE TITLES

EMBA Core Courses

ACC 401. Corporate Financial Accounting
***ACC 410.** Managerial Accounting and Performance Measurement
***CIS 401.** Information Systems for Management
EXP 420. Managerial Decision Analysis
EXP 422. Managerial Data Analysis
EXP 485. New Venture Development
***FIN 402.** Capital Budgeting and Corporate Objectives
***FIN 413.** Corporate Finance and Capital Budgeting
MKT 402. Marketing Management
***OMG 402.** Operations Management
STR 401. Managerial Economics
STR 403. Organization and Strategy
STR 421. Competitive Strategy
***STR 422.** Game Theory for Managers

Other MBA Courses

***ACC 411.** Applied Financial Statement Analysis with Data Analytics
***ACC 417.** Auditing
***ACC 418.** Taxes and Business Strategy
ACC 423. Financial Reporting I
ACC 424. Financial Reporting II
ACC 436. Research into Professional Accounting Standards
ACC 437. Basic Federal Income Tax Accounting
***ACC 438.** Auditing II – Auditing and Information Systems
***ACC 439.** Accounting Analytics for Forensics
ACC 440. Basic Income Tax – Business Entities and Gift/Estate Taxes
ACC 441. Gov/Nonprofit, Sustainable and Responsible Accounting
***ACC 447.** Reporting Analytics in Financial Markets
***BPP 426.** Macroeconomic Policy: Choices and Outcomes
BPP 433. Business Law and Policy
***CIS 413.** Managing Digital Products and Platforms
***CIS 415.** Business Process Analysis & Design
***CIS 417.** Introduction to Business Analytics
***CIS 418.** Advanced Business Modeling and Analysis Using Spreadsheets
***CIS 431.** Big Data
***CIS 432.** Machine Learning for Business Analytics
***CIS 433.** AI and Deep Learning
***CIS 434.** Social Media and Text Analytics
CIS 461 . Strategy and Business Systems Consulting Practicum
ENT 442C. Practicum in Urban Entrepreneurship
ENT 442X. International Business Practicum/Israel Immersion
***FIN 411.** Investments
***FIN 418.** Quantitative Investing
FIN 421. Asset Management
***FIN 424.** Financial Options and Strategic Flexibility
***FIN 430.** Advanced Capital Budgeting and Strategic Financial Management
***FIN 434.** Investments and Trading Strategy
***FIN 438.** Mergers & Acquisitions
***FIN 439.** Corporate Restructuring
FIN 442X. International Finance – Swiss Immersion
***FIN 443.** Special Topics in Finance: Private Equity
***FIN 444.** Entrepreneurial Finance
***FIN 446.** Financial Technology
***FIN 447.** ESG and Sustainable Investing
***FIN 448.** Fixed Income Securities
***FIN 449.** Special Topics in Finance: Real Estate
FIN 450. Finance Project
GBA 419. Leading Teams
GBA 435. Negotiation Theory and Practice: Bargaining for Value
***GBA 436R.** Predictive and Causal Analytics
GBA 439. Elements of Leadership
GBA 441. Business Ethics & Corporate Social Responsibility
GBA 442X. Doing Business in South Africa
***HSM 420.** Business Economics of the Health Care Industry
HSM 430. Health Sciences Management and Strategy
HSM 437. Managing Health Care Operations
HSM 440. Evolving Medical Markets
HSM 452. Health Care Accounting and Finance
HSM 454. Leading Health Care Organizations
HSM 464. Health IT and Analytics
***MKT 412.** Marketing Research
MKT 413. Applied Product Management
***MKT 414/STR 423.** Pricing Policies
***MKT 421.** Advanced Marketing Strategy
MKT 431. Consumer Behavior
MKT 432. New Product Strategy
MKT 433. Advertising Strategy
***MKT 437.** Digital Marketing Strategy
MKT 438. B2B Pricing
***MKT 439/STR 439.** Advanced Pricing
***MKT 440.** Pricing Analytics
***MKT 441.** Brand Management Workshop
MKT 448. Brand Strategy Workshop
MKT 449. Global Marketing Strategy
MKT 450. Product Management Workshop
***MKT 451.** Consumer and Brand Research
MSM 491. Math for Management
***OMG 411.** Supply Chain Analytics
***OMG 415.** Process Improvement
***OMG 416.** Project Management
STR 424. Human Resource Strategy

* STEM-designated courses

Full-Time MBA

Ravi Mantena
MBA Faculty Director

Mission Statement and Strategic Goals

An MBA from Simon Business School is about more than a credential—it's about a new level of clarity. We're proud to offer a full-time MBA with an unabashedly analytical bias and the opportunities you need to reflect, refine, and take risks, all in an intentionally small community at the University of Rochester.

Our specialized MBA curriculum gives you the freedom to select MBA courses that suit your career ambitions with tracks in finance, consulting, and marketing. Under these three tracks, we offer MBA specializations that bring together coursework, co-curricular learning opportunities, and career-building opportunities, as well as 10 minors that reinforce in-demand analytical skills.

https://www.simon.rochester.edu/programs/full-time-mba

Graduate Faculty Information

Kristina Brecko, PhD, *Stanford University*
Assistant Professor

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Joint Appointment(s): College of Arts and Sciences

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Joint Appointment(s): College of Arts and Sciences

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Associate Professor

Joanna Wu, PhD, *Tulane University*
Professor
Susanna and Evans Y. Lam Professor

Tianli Xia, PhD, *University of Wisconsin-Madison*
Assistant Professor

Billy Xu, PhD, *Rice University*
Assistant Professor

Pavel Zryumov, PhD, *Stanford University*
Assistant Professor

Admissions

Applying to Master's Programs

At Simon, we value well-developed communication skills in our applicants. We seek self-motivated individuals who believe that graduate study will significantly enhance both their technical and personal skills. Additionally, we seek evidence of team experiences and leadership skills, shown through extracurricular experience and/or on-the-job projects.

We use the admission interview, combined with your resume, essays, and references, to assess these qualitative aspects of your application.

The admission interview is an important two-way communication, and you should treat it as you would a job interview. Dress professionally, arrive a little ahead of schedule, and come prepared to discuss your background. We recommend you also prepare a few questions that will allow you to learn more about Simon and the admissions process.

When making admission decisions, we consider work experience to include both internships and/or post-baccalaureate experience. The quality and quantity of experience, combined with career goals, are equally evaluated. Your decision to pursue graduate study should be consistent with the career goals typically offered for this program.

We seek candidates committed to academic excellence. We review GMAT, GRE, or Executive Assessment exam scores and consider the overall results, as well as your quantitative and verbal distribution on the exam. Additionally, we evaluate all undergraduate and graduate coursework that has been completed prior to applying. Specific review of business, accounting, and math grades are considered in addition to your cumulative GPA. Applicant concerns on any dimension of the academic profile should be briefly addressed in the optional essay.

Information for International Applicants

Every enrolling MBA student must successfully demonstrate excellent English communication skills. We highly recommend a minimum TOEFL score of 100 with sub-scores in the mid-20s or a minimum IELTS score of 7.5 with sub-scores of at least 7.

Academics

Master's Degree and Requirements

To earn the Master of Business Administration degree, a full-time student must complete 68 credit-hours of study with a minimum 3.0 grade-point average. All students must take 10 required core courses, the MGC course sequence, a project elective, two breadth electives, and a summer internship (or an approved alternative). The remaining credits will be fulfilled through electives. Any credit achieved to meet the summer internship requirement (GBA 490) will not be counted towards MBA graduation credits.

Much of the academic work in the MBA program will rely on computer-based analysis and computer-assisted presentations. Upon entry to the program, faculty will expect students to have a working knowledge of spreadsheet, presentation, and word-processing software. The programs most widely used are Microsoft Excel, PowerPoint, and Word.

Although not required, a student may complete a specialization or minor. Students can earn a STEM designation for their MBA if 50% (34 credits) or more of the minimum credits required for the degree come from STEM-designated courses. STEM-designated courses are indicated with an asterisk (*)

Consulting Specializations
- Strategy
- Pricing
- Technology
- Operations

Finance Specializations
- Banking
- Asset Management
- Venture Capital and Private Equity
- Corporate Finance

Marketing Specializations
- Brand Management
- Product Management

Cross-Functional Minors
- Analytics
- Innovation and Entrepreneurship
- Leadership
- Global Business
- Health Sciences Management

Functional Minors
- Accounting

- Finance
- Marketing
- Consulting: Strategy and Pricing
- Consulting: Operations and Technology

GRADUATE COURSE TITLES

MBA Core Courses

ACC 401. Corporate Financial Accounting
***CIS 401.** Information Systems for Management
***FIN 402.** Capital Budgeting and Corporate Objectives
GBA 401. Structured Problem Solving
***GBA 411.** Business Modeling
***GBA 412.** Data Analytics
MKT 402. Marketing Management
***OMG 402.** Operations Management
***STR 401.** Managerial Economics
STR 421. Competitive Strategy
MGC 401. Professional Communication: Persuasion in Business Relationships
MGC 402. Influence in Interpersonal Interactions

Electives and Other Courses

***ACC 410.** Managerial Accounting and Performance Measurement
***ACC 411.** Applied Financial Statement Analysis with Data Analytics
***ACC 417.** Auditing
***ACC 418.** Taxes and Business Strategy
ACC 423. Financial Reporting I
ACC 424. Financial Reporting II
ACC 436. Research into Professional Accounting Standards
ACC 437. Basic Federal Income Tax Accounting
***ACC 438.** Auditing II – Auditing and Information Systems
***ACC 439.** Accounting Analytics for Forensics
ACC 440. Basic Income Tax – Business Entities and Gift/Estate Taxes
ACC 441. Gov/Nonprofit, Sustainable and Responsible Accounting
***ACC 447.** Reporting Analytics in Financial Markets
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ENT 423. New Venture Development
ENT 442C. Practicum in Urban Entrepreneurship
ENT 442X. International Business Practicum/Israel Immersion
***FIN 411.** Investments
***FIN 413.** Corporate Finance and Capital Budgeting
***FIN 418.** Quantitative Investing
FIN 421. Asset Management
***FIN 424.** Financial Options and Strategic Flexibility
***FIN 430.** Advanced Capital Budgeting and Strategic Financial Management
***FIN 434.** Investments and Trading Strategy
***FIN 438.** Mergers & Acquisitions
***FIN 439.** Corporate Restructuring
FIN 442X. International Finance – Swiss Immersion
***FIN 443.** Special Topics in Finance: Private Equity
***FIN 444.** Entrepreneurial Finance
***FIN 446.** Financial Technology
***FIN 447.** ESG and Sustainable Investing
***FIN 448.** Fixed Income Securities
***FIN 449.** Special Topics in Finance: Real Estate
FIN 450. Finance Project
GBA 419. Leading Teams
GBA 435. Negotiation Theory and Practice: Bargaining for Value
***GBA 436R.** Predictive and Causal Analytics
GBA 439. Elements of Leadership
GBA 441. Business Ethics & Corporate Social Responsibility
GBA 442X. Doing Business in South Africa
***HSM 420.** Business Economics of the Health Care Industry
HSM 430. Health Sciences Management and Strategy
HSM 437. Managing Health Care Operations
HSM 440. Evolving Medical Markets
HSM 452. Health Care Accounting and Finance
HSM 454. Leading Health Care Organizations
HSM 464. Health IT and Analytics
***MKT 412.** Marketing Research
MKT 413. Applied Product Management
***MKT 414/STR 423.** Pricing Policies
***MKT 421.** Advanced Marketing Strategy
MKT 431. Consumer Behavior
MKT 432. New Product Strategy
MKT 433. Advertising Strategy
***MKT 437.** Digital Marketing Strategy
MKT 438. B2B Pricing
***MKT 439/STR 439.** Advanced Pricing
***MKT 440.** Pricing Analytics
***MKT 441.** Brand Management Workshop
MKT 448. Brand Strategy Workshop

MKT 449. Global Marketing Strategy
MKT 450. Product Management Workshop
***MKT 451.** Consumer and Brand Research
MSM 491. Math for Management
***OMG 411.** Supply Chain Analytics
***OMG 415.** Process Improvement
***OMG 416.** Project Management
STR 403. Organization and Strategy
***STR 422.** Game Theory for Managers
STR 424. Human Resource Strategy
STR 425. Innovation strategy
STR 427. Organizational Behavior
STR 428. Strategy Beyond Markets
STR 437. Leading a Culture of Innovation

STEM-designated courses are indicated with a single asterisk (*).

MS in Medical Management

Sam Ogie
MMM Faculty Director

Mission Statement and Strategic Goals

Simon Business School's Master of Science in Medical Management program provides the skills needed for success in the dynamic and changing world of health care. New regulations and emerging innovations present challenges and opportunities for professionals across the industry. In addition to staying current with new information, medical and health-services leaders must be equipped with the expertise to predict and adapt to the evolving business of health care.

https://www.simon.rochester.edu/programs/medical-management

Graduate Faculty Information

Roy Jones, PhD, *Stanford University*
Clinical Professor

Ravi Mantena, PhD, *New York University*
Clinical Professor

Paul Nelson, PhD, *University of Rochester*
Clinical Professor

Samuel Ogie, MBA, *University of Rochester*
Clinical Assistant Professor

Ronald Schmidt, MA, *The Ohio State University*
Clinical Professor

Vera Tilson, PhD, *Case Western Reserve University*
Associate Professor

Gerard Wedig, PhD, *Harvard University*
Associate Professor

Admissions

Applying to Master's Programs

The MS in Medical Management degree is designed to fit your lifestyle and your career goals. It's important to choose a program that prepares you for your future professional life without getting in the way of your current professional life. Our admissions team can work with you to determine how Simon can best help you achieve your aspirations in healthcare management.

Our selection process is based on your business experience, academic achievement, professional growth potential, and motivation and drive to succeed in an analytically rigorous, growth-minded program. No GMAT/GRE is required; Simon offers the option to apply without a GMAT/GRE score.

Who should apply?

- ·Patient care providers, including doctors, nurses, pharmacists, dentists, advanced practice providers, and therapists
- ·Non-clinical staff, including researchers, technicians, administrators, technology staff, human resources staff, marketing staff, and finance professionals.

Application Requirements

- Online application form
- Current resume
- Two required essays (500-word limit)
- College transcripts
- Two professional references
- $90 application fee
- Optional: GMAT or GRE test results
- Optional: Video Essay

Academics

Master's Degree and Requirements

Simon offers a part-time MS program in Medical Management to provide physicians, hospital administrators, and medical professionals with management tools and an understanding of the key business issues that confront healthcare providers. The part-time structure of the program allows healthcare professionals to maintain their career and personal commitments while in the program.

The program, which consists of 31 credits, focuses on developing healthcare managers and leaders who will be confident in making key financial, operational, and strategic decisions for their organizations. The medical management student enrolls in a health care-specific class that meets one night per week. During the same term, the student also takes a class on two separate weekends to cover core business concepts.

Curriculum

The curriculum is designed around four core areas of management that are especially relevant to health care:

- Developing marketing and business plans
- Quantifying strategy through financial analysis
- Implementing strategy by efficiently managing operations, and
- Building efficient organizations for the long run, through intelligent work design, performance assessment, and employee incentives.

GRADUATE COURSE TITLES

HSM 420. Business Economics of the Health Care Industry
HSM 425. Managerial Accounting for Health Care Organizations
HSM 430. Health Sciences Management and Strategy
HSM 437. Managing Health Care Operations
HSM 451. Health Care Marketing and Business Plan Development
HSM 452. Health Care Accounting and Finance
HSM 454. Leading Health Care Organizations
HSM 455. Health Care Practicum I
HSM 456. Health Care Practicum II
HSM 464. Health IT and Analytics
HSM 465. Health Care Data Visualization and Analytics
STR 403. Organization and Strategy

Full-Time MS in Accountancy

Tim Hungerford
MSA Faculty Director

Mission Statement and Strategic Goals

The MS in Accountancy goes beyond the numbers. Led by some of the world's best professors, our 150-credit-hour-compliant program is much more than ordinary test preparation and educationally qualifies you to sit for the New York State CPA exam.

https://www.simon.rochester.edu/programs/full-time-ms-in-accountancy

Graduate Faculty Information

Tim Hungerford, MS, *Rochester Institute of Technology*
Clinical Associate Professor

Glenn Huels, MBA, *Rochester Institute of Technology*
Clinical Associate Professor

Sudarshan Jayaraman, PhD, *University of North Carolina at Chapel Hill*
Professor
Wesray Professor of Business Administration

Ekaterina Malova, PhD, *University of Miami*
Clinical Assistant Professor

Paul Shanahan, JD, *Albany Law School of Union University*
Executive Professor

Heidi Tribunella, MS, *SUNY Institute of Technology*
Clinical Professor

Charles Wasley, PhD, *The University of Iowa*
Professor
Joseph and Janice Willett Distinguished Scholar

Admissions

Applying to Master's Programs

At Simon we value well-developed communication skills in our applicants. We seek self-motivated individuals who believe that graduate study will significantly enhance both their technical and personal skill sets. Additionally, we seek evidence of team experiences and leadership skills, shown through extracurricular experience and/or on-the-job projects.

When making admission decisions, we consider work experience to include both internships and/or post-baccalaureate experience. The quality and quantity of experience, combined with career goals, are equally evaluated. Your decision to pursue graduate study should be consistent with the career goals typically offered for a business master's program.

We seek candidates committed to academic excellence. GMAT or GRE exam scores are optional, but if submitted, we will consider the overall results, as well as your quantitative and verbal distribution on the exam. Additionally, we evaluate all undergraduate and graduate coursework that has been completed prior to applying. Specific review of business, accounting, and math grades are considered in addition to your cumulative GPA. Applicant concerns on any dimension of the academic profile should be briefly addressed in the required essay.

Every enrolling MS student must successfully demonstrate excellent English communication skills. We highly recommend a minimum TOEFL score of 100 with sub-scores in the mid-20s, a minimum IELTS score of 7.5 with sub-scores of at least 7, or a minimum Duolingo English Test score of 125 with sub-scores of at least 120.

In addition to required ESL test scores, Simon applicants will complete a required video essay along with their application, which is another opportunity to showcase English language skills.

Required Application Materials

- Resume and work history
- Two required essays (250–500 words)
- College transcripts
- GMAT or GRE scores (can be waived)
- References
- $90 application fee (waived for qualifying candidates)
- TOEFL, IELTS, or Duolingo English Test scores (international applicants)
- Video essay

Academics

Master's Degree and Requirements

The program of study for the Master of Science in Accountancy is a lockstep program, which meets all the requirements for a STEM-designated degree. Students take 13 core courses and 1 elective. A minimum 3.0 grade point average is required for graduation. STEM-designated courses are indicated with an asterisk (*). Assuming that students have met certain undergraduate prerequisites, this program has been designated by the New York State Education Department as fulfilling the 150 credit-hour requirement for professional education programs in public accountancy.

Students whose undergraduate programs do not satisfy all the assumed prerequisites will be advised of the additional courses that they must complete following a review of their undergraduate transcript. The New York State Education Department will have final approval upon application for licensure.

GRADUATE COURSE TITLES

Core Courses

***ACC 410.** Managerial Accounting and Performance Measurement
***ACC 411.** Applied Financial Statement Analysis with Data Analytics
***ACC 417.** Auditing
ACC 423. Financial Reporting I
ACC 424. Financial Reporting II
***ACC 438.** Accounting Information Systems
ACC 441. Gov/Nonprofit, Sustainable and Responsible Accounting
ACC 446. Accounting/Fintech
***ACC 447.** Reporting Analytics in Financial Markets
BPP 433. Basic Business Law and Policy
***GBA 462R.** Core Statistics for MS Students Using R
***GBA 464.** Programming for Analytics
MGC 461. Professional Communication

Elective Courses

***ACC 418.** Taxes and Business Strategy
ACC 437. Basic Federal Income Tax Accounting
***ACC 439.** Accounting Analytics for Forensics
ACC 440. Basic Income Tax – Business Entities and Gift/Estate Taxes

* STEM-designated courses

Advanced Certificates of Achievement

Students can also earn an advanced certificate of achievement in Forensic Accounting & Fraud Examination and Tax in addition to their degree by completing the following course sequences.

GRADUATE COURSE TITLES

Forensic Accounting & Fraud Examination

***ACC 417.** Auditing
BPP 433. Basic Business Law and Policy
***ACC 438.** Accounting Information Systems
***ACC 439.** Accounting Analytics for Forensics

Tax

ACC 437. Basic Federal Income Tax Accounting
***ACC 418.** Taxes and Business Strategy
ACC 440. Basic Income Tax – Business Entities and Gift/Estate Taxes

* STEM-designated courses

Full-Time MS in Business Analytics

Liza Mohr
Faculty Director

Mission Statement and Strategic Goals

Join our MS in AI in Business to master the cutting-edge AI technologies transforming industries. Simon's unique program blends analytical rigor with practical AI applications, preparing you to leverage AI for business value creation. You'll gain experience in machine learning and data analytics, culminating in an AI-focused project with real-world impact. Additionally, you'll develop the strategic communication skills necessary to effectively convey these innovations to diverse audiences.

https://simon.rochester.edu/programs/full-time-ms-artificial-intelligence-in-business

Graduate Faculty Information

Hana Choi, PhD, *Duke University*
Assistant Professor

Linda Daley, PhD, *Syracuse University*
Clinical Associate Professor

Avery Haviv, PhD, *University of Toronto*
Associate Professor

Yufeng Huang, PhD, *Tilberg University*
Associate Professor

Daniel Keating, MBA, *University of Rochester*
Clinical Associate Professor

Young Sun Lee, PhD, *Florida State University*
Clinical Associate Professor

Mikhail Lysyakov, PhD, *University of Maryland*
Assistant Professor

Ekaterina Malova, PhD, *University of Miami*
Clinical Assistant Professor

Jeanine Miklos-Thal, PhD, *University of Toulouse*
Professor
Fred H. Gowen Professor of Economics and Management

Derek Mohr, JD, *Case Western Reserve University*
Clinical Associate Professor

Liza Mohr, MA, *University of Rochester*
Clinical Associate Professor
Faculty Director

Paul Nelson, PhD, *University of Rochester*
Clinical Professor

Ricky Roet-Green, PhD, *Tel Aviv University*
Associate Professor

Zach Roth, MBA, *University of Rochester*
Clinical Assistant Professor

Huaxia Rui, PhD, *University of Texas at Austin*
Professor
Xerox Professor of Information Systems and Technology

Greg Shaffer, PhD, *Princeton University*
Professor
Olin Professor

Yaron Shaposhnik, PhD, *Massachusetts Institute of Technology*
Assistant Professor

David Tilson, PhD, *Case Western University*
Clinical Professor

Admissions

Applying to Master's Programs

At Simon we value well-developed communication skills in our applicants. We seek self-motivated individuals who believe that graduate study will significantly enhance both their technical and personal skill sets. Additionally, we seek evidence of team experiences and leadership skills, shown through extracurricular experience and/or on-the-job projects.

When making admission decisions, we consider work experience to include both internships and/or post-baccalaureate experience. The quality and quantity of experience, combined with career goals, are equally evaluated. Your decision to pursue graduate study should be consistent with the career goals typically offered for a business master's program.

We seek candidates committed to academic excellence. GMAT or GRE exam scores are optional, but if submitted, we will consider the overall results, as well as your quantitative and verbal distribution on the exam. Additionally, we evaluate all undergraduate and graduate coursework that has been completed prior to applying. Specific review of business, accounting, and math grades are considered in addition to your cumulative GPA. Applicant concerns on any dimension of the academic profile should be briefly addressed in the required essay.

Information for International Applicants

Every enrolling MS student must successfully demonstrate excellent English communication skills. We highly recommend a minimum TOEFL score of 100 with sub-scores in the mid-20s, a minimum IELTS score of 7.5 with sub-scores of at least 7, or a minimum Duolingo English Test score of 125 with sub-scores of at least 120.

In addition to required ESL test scores, Simon applicants will complete a required video essay along with their application, which is another opportunity to showcase English language skills.

Required Application Materials

- Resume and work history
- Two required essays (250–500 words)
- College transcripts
- GMAT or GRE scores (can be waived)
- References
- $90 application fee (waived for qualifying candidates)
- TOEFL, IELTS, or Duolingo English Test scores (international applicants)
- Video essay

Academics

Master's Degrees and Requirements

Simon's one-year MS program in AI in Business is positioned to give students a technical competence in AI, as well as overall business acumen with AI at the forefront, enabling students to use the most innovative tools for value creation. With rapid advancements in generative AI reshaping industries, it is increasingly important for students to have a significant understanding of AI and to be equipped with the most relevant and cutting-edge skills to succeed in today's dynamic business landscape.

The program has a significant STEM component, with course offerings focused on technology, statistics, and mathematics. An AI-focused business analytics project brings together the program's conceptual frameworks, analytical methodologies, and technical skills; students apply their knowledge and skills to a real-life project for a corporate sponsor organization. Students take 9 core courses, 3 electives, and 1 project course. A minimum 3.0 grade point average is required for graduation.

GRADUATE COURSE TITLES

Core Courses

***CIS 433.** AI and Deep Learning
***CIS 455.** AI Business Project
***GBA 424.** Analytics Design and Applications
***GBA 462P.** Core Statistics for MS Students Using Python
***GBA 464.** Programming for Analytics
***GBA 478.** AI and Business
***GBA479.** Generative AI and Business Applications
MGC 461. Professional Communication

Elective Options

***CIS 431.** Big Data
***CIS 432.** Advanced Predictive Analytics with Python

***CIS 434.** Social Media and Text Analytics
***CIS 438.** Web-based AI Application with Foundation Models
***CIS 467.** Data Management and Warehousing
***GBA 436R.** Causal and Predictive Analytics
***GBA 468P.** Prescriptive Analytics with Python

Advanced Certificates of Achievement

Students can also earn an advanced certificate of achievement in either analytics or systems and data architectures in addition to their degree by completing the following course sequences.

GRADUATE COURSE TITLES

Analytics
***CIS 434.** Social Media and Text Analytics
***GBA 436R.** Causal and Predictive Analytics

And choosing 1 of
***CIS 432.** Advanced Predictive Analytics with Python
***GBA 468P.** Prescriptive Analytics with Python

Systems and Data Architectures
***CIS 431.** Big Data
***CIS 438.** Web-based AI Application with Foundation Models
***CIS 467.** Data Management and Warehousing

* STEM-designated courses

Full-Time MS in Artificial Intelligence in Business

Liza Mohr
Faculty Director

Mission Statement and Strategic Goals

Simon is renowned for its rigorously analytical curriculum. In our STEM-designated MS in Business Analytics program, we pair our analytical bias with our economics-based curriculum to equip students with the theories and practical frameworks that will make them sought-after analysts. We provide an understanding of analytic tools such as Python and R to leverage the big-data insights that drive business strategy forward.

https://www.simon.rochester.edu/programs/full-time-ms-in-business-analytics

Graduate Faculty Information

Hana Choi, PhD, *Duke University*
Assistant Professor

Linda Daley, PhD, *Syracuse University*
Clinical Associate Professor

Avery Haviv, PhD, *University of Toronto*
Associate Professor

Yufeng Huang, PhD, *Tilberg University*
Associate Professor

Daniel Keating, MBA, *University of Rochester*
Clinical Associate Professor

Young Sun Lee, PhD, *Florida State University*
Clinical Associate Professor

Mikhail Lysyakov, PhD, *University of Maryland*
Assistant Professor

Ekaterina Malova, PhD, *University of Miami*
Clinical Assistant Professor

Jeanine Miklos-Thal, PhD, *University of Toulouse*
Professor
Fred H. Gowen Professor of Economics and Management

Derek Mohr, JD, *Case Western Reserve University*
Clinical Associate Professor

Liza Mohr, MA, *University of Rochester*
Clinical Associate Professor
Faculty Director

Paul Nelson, PhD, *University of Rochester*
Clinical Professor

Ricky Roet-Green, PhD, *Tel Aviv University*
Associate Professor

Zach Roth, MBA, *University of Rochester*
Clinical Assistant Professor

Huaxia Rui, PhD, *University of Texas at Austin*
Professor
Xerox Professor of Information Systems and Technology

Greg Shaffer, PhD, *Princeton University*
Professor
Olin Professor

Yaron Shaposhnik, PhD, *Massachusetts Institute of Technology*
Assistant Professor

Takeaki Sunada, PhD, *University of Pennsylvania*
Assistant Professor

Teck Yong Tan, PhD, *Columbia University*
Assistant Professor

David Tilson, PhD, *Case Western University*
Clinical Professor

Admissions

Applying to Master's Programs

At Simon we value well-developed communication skills in our applicants. We seek self-motivated individuals who believe that graduate study will significantly enhance both their technical and personal skill sets. Additionally, we seek evidence of team experiences and leadership skills, shown through extracurricular experience and/or on-the-job projects.

When making admission decisions, we consider work experience to include both internships and/or post-baccalaureate experience. The quality and quantity of experience, combined with career goals, are equally evaluated. Your decision to pursue graduate study should be consistent with the career goals typically offered for a business master's program.

We seek candidates committed to academic excellence. GMAT or GRE exam scores are optional, but if submitted, we will consider the overall results, as well as your quantitative and verbal distribution on the exam. Additionally, we evaluate all undergraduate and graduate coursework that has been completed prior to applying. Specific review of business, accounting, and math grades are considered in addition to your cumulative GPA. Applicant concerns on any dimension of the academic profile should be briefly addressed in the required essay.

Information for International Applicants

Every enrolling MS student must successfully demonstrate excellent English communication skills. We highly recommend a minimum TOEFL score of 100 with sub-scores in the mid-20s, a minimum IELTS score of 7.5 with sub-scores of at least 7, or a minimum Duolingo English Test score of 125 with sub-scores of at least 120.

In addition to required ESL test scores, Simon applicants will complete a required video essay along with their application, which is another opportunity to showcase English language skills.

Required Application Materials

- Resume and work history
- Two required essays (250–500 words)
- College transcripts
- GMAT or GRE scores (can be waived)
- References
- $90 application fee (waived for qualifying candidates)
- TOEFL, IELTS, or Duolingo English Test scores (international applicants)
- Video essay

Academics

Master's Degrees and Requirements

The program of study for the Master of Science in Business Analytics degree has been designated as a lockstep program, which meets all the requirements for a STEM-designated program. It combines business frameworks with the latest data analytics techniques to provide students with skills and concepts to deal with big data in organizations. Students will learn concepts for dealing with large volumes of data and real-time and unstructured data from organizational, web, and social sources. Economics, statistics, and elements from computer science form the foundation of the program. Students take 9 core courses, 3 electives, and 1 project course. A minimum 3.0 grade point average is required for graduation.

GRADUATE COURSE TITLES

Core Courses

***CIS 434.** Social Media and Text Analytics
***CIS 465.** Business Analytics Project
***CIS 467.** Data Management and Warehousing
***GBA 424.** Analytics Design and Applications
***GBA 436R.** Causal and Predictive Analytics
***GBA 462P.** Core Statistics for MS Students Using Python
GBA 463. Economics and Marketing Strategy for MS Students
***GBA 464.** Programming for Analytics
***GBA 468P.** Prescriptive Analytics with Python
MGC 461. Professional Communication

Elective Options
***CIS 431.** Big Data
***CIS 432.** Advanced Predictive Analytics with Python
***CIS 433.** AI and Deep Learning
***FIN 430.** Advanced Capital Budgeting and Strategic Financial Management
***GBA/FIN 478.** AI and Business
***GBA479.** Generative AI and Business Applications
***OMG 402.** Operations Management
***OMG 411.** Supply Chain Analytics
OMG 416. Project Management
MKT 413. Applied Product Management
***MKT 414.** Pricing Policies
MKT438. B2B Pricing
***MKT 439.** Advanced Pricing
***MKT 440.** Pricing Analytics

Advanced Certificates of Achievement

Students can also earn advanced certificates of achievement in either Pricing or AI in addition to their degree by completing the following course sequences.

GRADUATE COURSE TITLES

Pricing
***MKT 414.** Pricing Policies

Choosing 2 of
MKT438. B2B Pricing
***MKT 439.** Advanced Pricing
***MKT 440.** Pricing Analytics

AI
***GBA/FIN 478.** AI and Business
***GBA479.** Generative AI and Business Applications
***CIS 433.** AI and Deep Learning

* STEM-designated courses

Full-Time MS in Finance

Dan Burnside
MSF Faculty Director

Mission Statement and Strategic Goals

Finance is a rewarding, fast-moving field, and the competition is fierce. The analytically rigorous, STEM-designated MS in Finance program from Simon Business School can help you gain a competitive edge. Whether you're pursuing a career in corporate finance, financial services, or risk management, Simon will give you the tools you need to succeed.

https://www.simon.rochester.edu/programs/full-time-ms-in-finance

Graduate Faculty Information

Dan Burnside, MBA, *University of Rochester*
Clinical Professor
MSF Faculty Director

Hana Choi, PhD, *Duke University*
Assistant Professor

Joseph Kalmenovitz, PhD, *New York University*
Assistant Professor

Daniel Keating, MBA, *University of Rochester*
Clinical Associate Professor

Narayana Kocherlakota, PhD, *University of Chicago*
Professor
Louise and Henry Epstein Professor of Business Administration

Yukun Liu, PhD, *Yale University*
Assistant Professor
William H Meckling Assistant Professor of Business Administration

Derek Mohr, JD, *Case Western Reserve University*
Clinical Associate Professor

Alan Moreira, PhD, *University of Chicago*
Associate Professor

Robert Novy-Marx, PhD, *University of California, Berkeley*
Professor
Lori and Alan S. Zekelman Distinguished Professor of Business Administration

Tom Patterson, MBA, *University of Rochester*
Clinical Associate Professor

Zach Roth, MBA, *University of Rochester*
Clinical Assistant Professor

Charles Wasley, PhD, *University of Iowa*
Professor
Joseph and Janice Willett Distinguished Scholar

Joanna Wu, PhD, *Tulane University*
Professor
Susanna and Evans Y. Lam Professor

Billy Xu, PhD, *Rice University*
Assistant Professor

Pavel Zryumov, PhD, *Stanford University*
Assistant Professor

Admissions

Applying to Master's Programs

At Simon we value well-developed communication skills in our applicants. We seek self-motivated individuals who believe that graduate study will significantly enhance both their technical and personal skill sets. Additionally, we seek evidence of team experiences and leadership skills, shown through extracurricular experience and/or on-the-job projects.

When making admission decisions, we consider work experience to include both internships and/or post-baccalaureate experience. The quality and quantity of experience, combined with career goals, are equally evaluated. Your decision to pursue graduate study should be consistent with the career goals typically offered for a business master's program.

We seek candidates committed to academic excellence. GMAT or GRE exam scores are optional, but if submitted, we will consider the overall results, as well as your quantitative and verbal distribution on the exam. Additionally, we evaluate all undergraduate and graduate coursework that has been completed prior to applying. Specific review of business, accounting, and math grades are considered in addition to your cumulative GPA. Applicant concerns on any dimension of the academic profile should be briefly addressed in the required essay.

Information for International Applicants

Every enrolling MS student must successfully demonstrate excellent English communication skills. We highly recommend a minimum TOEFL score of 100 with sub-scores in the mid-20s, a minimum IELTS score of 7.5 with sub-scores of at least 7, or a minimum Duolingo English Test score of 125 with sub-scores of at least 120.

In addition to required ESL test scores, Simon applicants will complete a required video essay along with their application, which is another opportunity to showcase English language skills.

Required Application Materials

- Resume and work history
- Two required essays (250–500 words)
- College transcripts
- GMAT or GRE scores (can be waived)
- References
- $90 application fee (waived for qualifying candidates)
- TOEFL, IELTS, or Duolingo English Test scores (international applicants)
- Video essay

Academics

Master's Degrees and Requirements

The program of study for the Master of Science in Finance is a lockstep program that meets all the requirements for a STEM-designated degree. Students take 11 core courses, one elective, one project course, and the MGC course sequence. A minimum 3.0 grade point average is required for graduation.

Students will also have the option to complete 1 of 3 concentrations. Concentrations are made up of 2 track core classes and then 2 track electives. Concentrations are offered in the following areas: Investment Management and Financial Analysis, Corporate Finance and Strategy, and Fintech and Innovation.

GRADUATE COURSE TITLES

Core Courses

ACC 401.** Corporate Financial Accounting
***CIS 468.** Financial Spreadsheet Modeling
***FIN 411.** Financial Markets and Investments
***FIN 413.** Corporate Finance and Capital Budgeting
***FIN 462.** Foundations of Financial Economics
***FIN 465.** Applied Finance Project
***GBA 462P.** Core Statistics for MS Students Using Python
GBA 485A. Foundations of Python
MGC 461. Professional Communication

Elective Options

***ACC 411.** Applied Financial Statement Analysis with Data Analytics
***BPP 426.** Macroeconomic Policy: Choices and Outcomes
CIS 433. AI & Deep Learning
***FIN 418.** Quantitative Investing
***FIN 424.** Financial Options and Strategic Flexibility
***FIN 430.** Advanced Capital Budgeting and Strategic Financial Management
FIN 421. Special Topics in Finance: Asset Management
FIN 434. Investment Management and Trading Strategy
FIN 438. Mergers and Acquisitions
FIN 439. Corporate Restructuring
FIN 443. Private Equity

***FIN 444.** Entrepreneurial Finance (ENT 444)
***FIN 446.** Financial Technology
***FIN 448.** Debt Markets and Fixed Income Strategies
***FIN 478.** Intro to AI & Finance
***FIN 479.** Advanced AI in Finance

* STEM-designated courses
**Students with sufficient prior coursework in accountancy can petition to substitute ACC 401. Corporate Financial Accounting with ACC 423. Financial Reporting I.

Full-Time MS in Marketing Analytics

Paul Nelson
MSMA Faculty Director

Mission Statement and Strategic Goals

Lead, don't follow. Every decision that drives the digital marketplace is rooted in data generated by the consumer journey. In Simon's STEM-designated MS in Marketing Analytics program, you'll learn strategies to make you the go-to person for evidence-based information, insights, and answers.

https://www.simon.rochester.edu/programs/full-time-ms-in-marketing-analytics

Graduate Faculty Information

Hana Choi, PhD, *Duke University*
Assistant Professor

Linda Daley, PhD, *Syracuse University*
Clinical Associate Professor

Avery Haviv, PhD, *University of Toronto*
Associate Professor

Yufeng Huang, PhD, *Tilberg University*
Associate Professor

Daniel Keating, MBA, *University of Rochester*
Clinical Associate Professor

Young Sun Lee, PhD, *Florida State University*
Clinical Associate Professor

Mikhail Lysyakov, PhD, *University of Maryland*
Assistant Professor

Ekaterina Malova, PhD, *University of Miami*
Clinical Assistant Professor

Jeanine Miklos-Thal, PhD, *University of Toulouse*
Professor
Fred H. Gowen Professor of Economics and Management

Derek Mohr, JD, *Case Western Reserve University*
Clinical Associate Professor

Liza Mohr, MA, *University of Rochester*
Clinical Associate Professor
Faculty Director

Paul Nelson, PhD, *University of Rochester*
Clinical Professor
MS Marketing Analytics Faculty Director

Elena Nescio, MBA, *University of California, Berkeley*
Clinical Assistant Professor

Zach Roth, MBA, *University of Rochester*
Clinical Assistant Professor

Huaxia Rui, PhD, *University of Texas at Austin*
Professor
Xerox Professor of Information Systems and Technology

Greg Shaffer, PhD, *Princeton University*
Professor
Olin Professor

Yaron Shaposhnik, PhD, *Massachusetts Institute of Technology*
Assistant Professor

Takeaki Sunada, PhD, *University of Pennsylvania*
Assistant Professor

Teck Yong Tan, PhD, Columbia University
Assistant Professor

Admissions

Applying to Master's Programs

At Simon we value well-developed communication skills in our applicants. We seek self-motivated individuals who believe that graduate study will significantly enhance both their technical and personal skill sets. Additionally, we seek evidence of team experiences and leadership skills, shown through extracurricular experience and/or on-the-job projects.

When making admission decisions, we consider work experience to include both internships and/or post-baccalaureate experience. The quality and quantity of experience, combined with career goals, are equally evaluated. Your decision to pursue graduate study should be consistent with the career goals typically offered for a business master's program.

We seek candidates committed to academic excellence. GMAT or GRE exam scores are optional, but if submitted, we will consider the overall results, as well as your quantitative and verbal distribution on the exam. Additionally, we evaluate all undergraduate and graduate coursework that has been completed prior to applying. Specific review of business, accounting, and math grades are considered in addition to your cumulative GPA. Applicant concerns on any dimension of the academic profile should be briefly addressed in the required essay.

Information for International Applicants

Every enrolling MS student must successfully demonstrate excellent English communication skills. We highly recommend a minimum TOEFL score of 100 with sub-scores in the mid-20s, a minimum IELTS score of 7.5 with sub-scores of at least 7, or a minimum Duolingo English Test score of 125 with sub-scores of at least 120.

In addition to required ESL test scores, Simon applicants will complete a required video essay along with their application, which is another opportunity to showcase English language skills.

Required Application Materials

- Resume and work history
- Two required essays (250–500 words)
- College transcripts
- GMAT or GRE scores (can be waived)
- References
- $90 application fee (waived for qualifying candidates)
- TOEFL, IELTS, or Duolingo English Test scores (international applicants)
- Video essay

Academics

Master's Degree and Requirements

The program of study for the Master of Science in Marketing Analytics degree is a lockstep program that meets all the requirements for a STEM-designated degree. It is a complex, highly focused program designed to equip students with the skills and experience necessary to excel in marketing jobs. Students are likely to take a job related to one of the program's four main emphases: marketing research, consumer insights, pricing, and digital marketing. Students take seven core courses, five electives, one project course, and the MGC course sequence. A minimum 3.0 grade point average is required for graduation.

GRADUATE COURSE TITLES

Core Courses

***CIS 467.** Data Management and Warehousing
***GBA 424.** Analytics Design and Applications
***GBA 436R.** Causal and Predictive Analytics
***GBA 462P.** Core Statistics for MS Students Using Python
GBA 463. Economics and Marketing Strategy for MS Students
***GBA 464.** Programming for Analytics
MGC 461. Professional Communication
***MKT 414.** Pricing Policies
***MKT 465.** Marketing Analytics Projects

Elective Options

***CIS432.** Advanced Predictive Analytics with Python
***CIS 433.** AI and Deep Learning
***CIS 434.** Social Media and Text Analytics
***GBA 478.** AI and Business
MKT 413. Applied Product Management
MKT 431. Consumer Behavior
***MKT 437.** Digital Marketing Strategy

MKT438. B2B Pricing
***MKT 439.** Advanced Pricing
***MKT 440.** Pricing Analytics
***MKT 451.** Consumer and Brand Research
OMG 416. Project Management

* STEM-designated courses

Advanced Certificates of Achievement

Students can also earn an advanced certificate of achievement in either Pricing or Customer and Campaign Analytics in addition to their degree by completing the following course sequences.

GRADUATE COURSE TITLES

Pricing
***MKT 414.** Pricing Policies

Choosing 2 of
MKT438. B2B Pricing
***MKT 439.** Advanced Pricing
***MKT 440.** Pricing Analytics

Customer and Campaign Analytics
Choosing 3 of
MKT 413. Applied Product Management
MKT 431. Consumer Behavior
***MKT 437.** Digital Marketing Strategy
***MKT 451.** Consumer and Brand Research
OMG 416. Project Management

* STEM-designated courses

Online MS in Business Analytics & Applied AI

Liza Mohr
OMSBA Faculty Director

Mission Statement and Strategic Goals

AI is transforming business, and Simon's Online MS in Business Analytics & Applied AI will equip you with the skills to lead in this evolving landscape.

Simon's Online MS in Business Analytics & Applied AI program will help you strengthen and build your analytical skills while keeping pace with the latest advancements in AI. You'll learn to apply analytics to solve complex business problems and create custom business applications powered by AI technologies.

The expertise you gain will have an immediate positive impact, setting yourself apart from the competition and empowering you to help your organization reach new heights.

https://www.simon.rochester.edu/programs/online-msba

Graduate Faculty Information

Dan Keating, MBA, *University of Rochester*
Senior Lecturer

Ekaterina Malova, PhD, *University of Miami*
Clinical Assistant Professor

Ravi Mantena, PhD, *New York University*
Clinical Professor

Andras Miklos, PhD, *Central European University*
Clinical Associate Professor

Liza Mohr, MA, *University of Rochester*
Clinical Associate Professor

David Primo, PhD, *Stanford University*
Associate Professor
Ani and Mark Gabrellian Professor
Joint Appointment(s): College of Arts and Sciences

Zach Roth, MBA, *University of Rochester*
Clinical Assistant Professor

David Tilson, PhD, *Case Western University*
Clinical Professor

Tianli Xia, PhD, *University of Wisconsin - Madison*
Assistant Professor

Admissions

Applying to Master's Programs

The Online MS in Business Analytics & Applied AI program is a part-time, lockstep program for people who are working full time while studying.

All classes are fully online and designed for working professionals. Classes use both synchronous and asynchronous content to work with busy lifestyles. The program is designed to be completed in 14 months when started in August.

Most applicants will have successfully completed at least one undergraduate or higher statistics course, as well as basic college math. For individuals with limited college-level math, we may require MBAmath.com, a non-matriculated undergraduate course, or other demonstrated proficiency as a part of the application process.

The Online MS in Business Analytics & Applied AI does not require prior computer programming courses or experience. Having an understanding of these concepts is helpful, but the degree is designed to provide training so that you can manage or supervise individuals who may be responsible for programming and technical analytics.

Required Application Materials

- Online application form
- Current resume
- Two required essays (250-500 words)
- College transcripts
- Two professional references
- $90 application fee (waivers available)
- Video essay (optional)

Simon offers the option to apply without a GMAT/GRE/Executive Assessment score.

Academics

Master's Degree and Requirements

The Online MS in Business Analytics & Applied AI provides the technical and management skills needed to lead your organization at the next level. This program focuses on teaching students how to evaluate investments in analytics—which tools, data, and skills are most critical—and how to manage these investments—managing analytics teams, communicating analytics content, and leading with data.

Logistics and Time Requirements

The Online MS in Business Analytics & Applied AI is a 16-month program targeted to managers and aspiring managers with 3-15 years of work experience. The degree is offered on a part-time basis, primarily through online evening classes, along with two in-person immersion experiences.

GRADUATE COURSE TITLES

CIS 467 . Data Management, Warehousing and Visualization
GBA 444. Ethics and Policy in Tech
GBA 465. Introduction to Python Programming
GBA 471. Probability and Descriptive Analytics
GBA 472. Causal and Predictive Analytics
GBA 473. Data-Driven Decision Making
GBA 474. Advanced Analytics-Driven Decisions
GBA 475P. Online Business Analytics Capstone Project
GBA 476. Organizational Impact Using Analytics
GBA 478. AI and Business
GBA 479. Generative AI and Business Applications
MKT 472. Marketing Management Analytics

PhD in Business Administration

Christian Opp
PhD Faculty Director

Mission Statement and Strategic Goals

The PhD program at the Simon Business School is designed to equip students with the necessary analytical skills to carry out high-quality teaching and research in various fields of management.

https://www.simon.rochester.edu/programs/phd/program-overview

Graduate Faculty Information

Kristina Brecko, PhD, *Stanford University*
Assistant Professor

James Brickley, PhD, *University of Oregon*
Professor
Senior Associate Dean, Faculty and Research; Gleason Professor of Business Administration

Hana Choi, PhD, *Duke University*
Assistant Professor

Paul Ellickson, PhD, *Massachusetts Institute of Technology*
Professor
Michael and Diane Jones Professor of Business Administration

Ron Goettler, PhD, *Columbia University*
Professor
James N Doyle Professor of Entrepreneurship; Interim Senior Associate Dean of Education and Innovation

Harry Groenevelt, PhD, *Columbia University*
Associate Professor

Avery Haviv, PhD, *University of Toronto*
Associate Professor

Yufeng Huang, PhD, *Tilberg University*
Associate Professor

Sudarshan Jayaraman, PhD, *University of North Carolina at Chapel Hill*
Professor
Wesray Professor of Business Administration

Joseph Kalmenovitz, PhD, *New York University*
Assistant Professor

Ron Kaniel, PhD, *University of Pennsylvania*
Professor
Jay S. and Jeanne P. Benet Professor of Finance

Narayana Kocherlakota, PhD, *University of Chicago*
Professor
Lionel W. McKenzie Professor of Economics
Joint Appointment: College of Arts and Sciences

Alexandr Kopytov, PhD, *University of Pennsylvania*
Assistant Professor

Yukun Liu, PhD, *Yale University*
Assistant Professor
William H. Meckling Assistant Professor of Business Administration

Mitchell Lovett, PhD, *Duke University*
Professor
Interim Dean; Benjamin Forman Professor of Marketing

Mikhail Lysyakov, PhD, *University of Maryland*
Assistant Professor

Jeanine Miklos-Thal, PhD, *University of Toulouse*
Professor
Fred H. Gowen Professor of Economics and Management

Alan Moreira, PhD, *University of Chicago*
Associate Professor

Robert Novy-Marx, PhD, *University of California, Berkeley*
Professor
Lori and Alan S. Zekelman Distinguished Professor of Business Administration

Christian Opp, PhD, *University of Chicago*
Associate Professor
Faculty Director, PhD Program

Vivek Pandey, PhD, *University of Southern California*
Assistant Professor

Elena Prager, PhD, *University of Pennsylvania*
Assistant Professor

Alex Priest, PhD, *University of Texas*
Assistant Professor

Michael Raith, PhD, *London School of Economics*
Associate Professor

Ricky Roet-Green, PhD, *Tel Aviv University*
Associate Professor

Huaxia Rui, PhD, The University of Texas at Austin
Professor
Xerox Professor of Computers and Information Systems

Greg Shaffer, PhD, *Princeton University*
Professor
Olin Professor

Yaron Shaposhnik, PhD, *Massachusetts Institute of Technology*
Assistant Professor

Takeaki Sunada, PhD, *University of Pennsylvania*
Assistant Professor

Teck Yong Tan, PhD, *Columbia University*
Assistant Professor

Vera Tilson, PhD, *Case Western University*
Associate Professor

Giulio Trigilia, PhD, *Warwick University*
Assistant Professor

Charles Wasley, PhD, *University of Iowa*
Professor
Joseph and Janice Willett Distinguished Scholar

Gerard Wedig, PhD, *Harvard University*
Associate Professor

Joanna Wu, PhD, *Tulane University*
Professor
Susanna and Evans Y. Lam Professor

Tianli Xia, PhD, *University of Wisconsin-Madison*
Assistant Professor

Billy Xu, PhD, *Rice University*
Assistant Professor

Pavel Zryumov, PhD, *Stanford University*
Assistant Professor

Admissions

Applying to Doctoral Programs

Simon's doctoral program accepts full-time students only. AdSimon's doctoral program accepts full-time students only. Admissions decisions are made in early spring.

Our approach is to develop each student's unique potential, so all of an applicant's abilities are considered in admittance decisions. Each applicant is evaluated individually based on their full application. The GMAT and/or GRE is a requirement of the Simon School PhD application that cannot be waived. We do not have minimum requirements for test scores or GPA. Admitted students typically have GMAT scores around 700 or higher and GRE scores around 317 or higher.

We look for students with the best chance of success after reviewing all applicants for any given year.

We can offer the following suggestions to applicants:

- Prospective students should demonstrate a set of clearly defined career objectives.
- A strong quantitative background is essential.
- Your ability to communicate in English is heavily factored into admissions decisions.
- Recommendations that provide a good assessment of your abilities are helpful to the faculty admissions committee when evaluating your application.
- Any additional materials (optional) that you submit with your application should reflect your fit for the program.

Academics

The PhD program at the Simon Business School is designed to equip students with the necessary analytical skills to carry out high-quality teaching and research in various fields of management. The Simon School confers a PhD in Business Administration. Our major fields of study include: Accounting, Finance, Marketing, Information Systems, and Operations Management. Students build a firm foundation in economics, statistics, and their specific fields of study. Deeper specialization in coursework occurs in the second year when the students concentrate on their major fields of study. The PhD program is full-time only and consists of a minimum of 90 credit hours to include both coursework and research.

PhD program requirements vary by field of study, with the exception of the thesis proposal and thesis defense.

Doctoral Degrees and Requirements

PhD program requirements vary by field of study, except for the thesis proposal and thesis defense.

Accounting
16 required courses
The Accounting Preliminary Exam is given in June at the end of the first year and consists of two parts. The exam is based on questions from the following courses:

- FIN 505. Theory of Finance
- ACC 510. Accounting Research I
- ACC 511. Accounting Research II
- ACC 512. Adv. Topics in Acct. Research
- ACC 513. Contemporary Topics in Acct.

First-Year Paper: Each student must complete and successfully pass a research-oriented first-year paper. The paper is due by September 15th of the second year for Accounting students. The paper will then be presented in AEC510 or in an Accounting Workshop by the end of the fall term of the student's second year.

Qualifying Exam and Second-Year Paper: Students must pass an examination on the second-year paper by the end of the fall term of the third year. The paper is due by September 15th of the third year for Accounting students. This paper should be an original contribution to the literature in the specific major area. Students are scheduled to present their paper to a selected faculty committee in AEC510 that fall.

Finance

13 required courses

The Finance Preliminary Exam is given in June at the end of the first year and consists of two parts.

The exam is based on questions from the following courses:

- FIN 511. Continuous Time Theory and FIN 512. Empirical Asset Pricing

OR

- FIN 513. Agency Theory and FIN 514. Empirical Corporate

The exam is written and evaluated by a faculty committee. The committee will assign a combined grade to the exam for all parts.

First-Year Paper: Each student must complete and successfully pass a research-oriented first-year paper. The paper is due by October 15th of the second year for Finance students. The paper will then be presented in AEC510 by the end of the fall term of the student's second year.

Qualifying Exam and Second-Year Paper: The Finance Qualifying Exam consists of passing an examination on the second-year paper by the end of the fall term of the third year. The paper is due by September 15th of the third year for Finance students. This paper should be an original contribution to the literature in the specific major area. Students are scheduled to present their paper to a selected faculty committee in AEC510 that fall.

Marketing

11 required courses

Preliminary Requirement: First-year Marketing PhD students must demonstrate proficiency in the topics covered in a specific set of required classes. These courses fall into two categories, Econometrics and Marketing.

Econometrics core courses as listed below. This sequence is taken through the University of Rochester Economics department.

- ECO 484. Intro to Math Statistics/Intro to Econometrics
- ECO 485. Introduction to Econometrics

For these courses, students need to obtain a 3.3 (B+) GPA average. Failure to meet this average GPA indicates not meeting the milestones of the program and can result in being asked to leave the program, retake the courses, or demonstrate sufficient knowledge through other courses or means.

The Marketing core sequence comprises four required classes:

- AEC 520. Advanced Causal Inference plus Machine Learning
- MKT 511. 1st Year Core Research Topics in Quantitative Marketing
- MKT 511. 2nd Year Core Research Topics in Quantitative Marketing
- AEC 523 or AEC 524. Microeconometrics Static (or Dynamic) Approaches. At least one of these courses must be taken to demonstrate depth of skills in microeconometrics.

First-Year Paper: Each student must complete and successfully pass a research-oriented first-year paper. The paper is due by October 15th of the second year for marketing students. The paper will then be presented in a Marketing Seminar by the end of the fall term of the student's second year.

Qualifying Exam and Second-Year Paper: The Marketing Qualifying Exam consists of passing an examination on the second-year paper by the end of the fall term of the third year. The paper is due by September 15th of the third year for Marketing students. This paper should be an original contribution to the literature in the specific major area. Students are scheduled to present their paper to a selected faculty committee in a Marketing Seminar that fall.

Information Systems

11 required courses

Preliminary Requirement: First-year IS PhD students are required to demonstrate proficiency in the topics covered in these required classes:

- CIS 511. Research Topics and Methods in Information Systems
- MSM 504. Theory of Probability and Stochastic Processes I
- MSM 522. Optimization
- AEC 511. Advanced Price Theory

For these courses, students need to obtain a 3.3 (B+) GPA average.

First-Year Paper: Each student must complete and pass a first-year paper requirement, due by the end of the summer term (August 31st) of their first year. The student must identify two topics of interest in the area of research (business analytics, information systems, or operations). The topic must have the scope for original research. The student is expected to research the literature to find the state of the art in these areas and to properly place the problem in the context. Problem identification and some effort at originality is sufficient for the first-year paper. The work for the paper is to be done independently by the student, but the student may seek guidance and feedback from faculty. The student will present his/her work to a committee of IS faculty, to be selected by the PhD Faculty Committee, that will grade the first-year paper using the PhD Standard Evaluation Grading.

Second-Year Paper: The Information Systems second-year paper consists of students working on an individual research topic in conjunction with the faculty to write a research paper. This paper is due by May 31st of the end of the second year. The student will present his/her work to a committee of IS faculty, to be selected by the PhD Faculty Committee, that will evaluate the papers using the PhD Standard Evaluation Grading.

Candidacy Qualifying Exam: The Information Systems

Qualifying Exam is due by November 30th of the third year. This paper should be an original contribution to the literature in the specific major area and is usually a more in-depth version of the paper used for the second-year paper. The paper should be presented to the committee (formed before the second-year paper) by January 15th that will evaluate the paper and presentation.

Operations Management
11 required courses
Preliminary Requirement: A committee of OM faculty reviews students after the first year in early June. The expectation is that students would receive B+ or higher in all of their courses. In addition, the expectation is that students would receive A- or higher in the following courses:

- AEC 515. Microeconomic Theory
- MSM 504. Theory of Probability & Stochastic Processes I
- MSM 505. Theory of Probability & Stochastic Processes II
- MSM 522. Optimization

First-Year Paper: By the end of spring term of their first year (May 31st), students should pick two research questions. By the end of summer term (August 31st) of their first year, students should deliver initial drafts of the papers based on the two research questions that would include: a problem statement, initial problem formulation, and a literature review. The student will present his/her work to a committee of OM faculty, to be selected by the PhD Faculty Committee, that will grade the first-year paper using the PhD Standard Evaluation Grading. Successful completion of the initial drafts and presentation constitutes passing the preliminary requirement and first-year paper.

Second-Year Paper: The Operations Management second-year papers consist of the student's work on two individual research topics to write two research papers. These two papers are due by May 31st of the end of the second year. The student will present his/her work to a committee of OM faculty, to be selected by the PhD Faculty Committee, that will evaluate the papers and the presentation.

Candidacy Qualifying Exam: The Operations Management Qualifying Exam is due by November 30th of the third year. This paper should be an original contribution to the literature in the specific major area and is usually a more in depth version of one of the two papers used for the second-year papers. The paper should be presented to the committee (formed before the second-year paper) by January 15th and will be evaluated using the PhD Standard Evaluation Grading.

Dissertation Proposal: Students are expected to submit a thesis proposal paper along with a faculty advisor and committee. The exact form and timing of this proposal is defined by area requirements.

Dissertation Defense Seminar: The University of Rochester Graduate Student Office oversees all the thesis defense submissions. They have strict deadlines and policies that must be followed. See the University Graduate Studies Booklet Regulations Concerning Graduate Study for a detailed description of the final oral examination.

GRADUATE COURSE TITLES

ACC 501. Accounting Seminar
ACC 510. Accounting Research I
ACC 511. Accounting Research II
ACC 512. Advanced Topics in Accounting Research
ACC 513. Contemporary Topics in Accounting Research
AEC 506. Probability Theory
AEC 510. PhD Workshop in Applied Economics
AEC 513. Industrial Organization Theory
AEC 515. Microeconomic Theory
AEC 520. Causal Inference
AEC 523. Micro-Econometric Modeling: Static
AEC 524. Micro-Econometric Modeling: Dynamic Approaches
CIS 511 . Research Topics and Methods in Information Systems
CIS 512. Advanced Topics in Information Systems
FIN 505. Theory of Finance
FIN 511. Continuous Time Theory in Finance
FIN 512. Empirical Asset Pricing
FIN 513. Agency Theory
FIN 514. Empirical Corporate
FIN 522. Advanced Empirical Asset Pricing
FIN 523. Advanced Agency Theory
MGC 501. PhD Communication Workshop
MKT 505. Marketing Workshop
MKT 511. Core Research Topics in Quantitative Marketing
MKT 512. Advanced Topics/Quantitative Marketing Research
MSM 502. Linear Algebra
MSM 503. Optimization
MSM 504. Theory of Probability and Stochastic Processes I
MSM 505. Theory of Probability and Stochastic Processes II
MSM 511. Advanced Topics in Operations Management
MSM 512. Operations Management: Business Problem Context
MSM 518. Advanced Business Modeling
MSM 522. Optimization
MSM 532. Predictive Analytics Using Python
MSM 542. Queuing Theory and Applications

Professional MBA

Ravi Mantena
MBA Faculty Director

Mission Statement and Strategic Goals

The Simon Professional MBA program develops your ability to make strong business decisions by taking an economics-based approach. In as few as two and a half years of coursework, you'll gain the benefits of the full Simon MBA experience, including our analytically rigorous curriculum, career development resources, and world-renowned faculty. The program allows flexibility for students to pace their studies to best fit their personal and professional needs.

https://www.simon.rochester.edu/programs/pmba

Graduate Faculty Information

Kristina Brecko, PhD, *Stanford University*
Assistant Professor

James Brickley, PhD, *University of Oregon*
Professor
Senior Associate Dean, Faculty and Research; Gleason Professor of Business Administration

Dan Burnside, MBA, *University of Rochester*
Clinical Professor

Hana Choi, PhD, *Duke University*
Assistant Professor

Roberto Colangelo, MA, *State University of New York*
Executive Professor

Paul Ellickson, PhD, *Massachusetts Institute of Technology*
Professor
Michael and Diane Jones Professor of Business Administration

Ron Goettler, PhD, *Columbia University*
Professor
James N Doyle Professor of Entrepreneurship; Interim Senior Associate Dean of Education and Innovation

Harry Groenevelt, PhD, *Columbia University*
Associate Professor

Avery Haviv, PhD, *University of Toronto*
Associate Professor

Yufeng Huang, PhD, *Tilberg University*
Associate Professor

Glenn Huels, MBA, *Rochester Institute of Technology*
Clinical Associate Professor

Tim Hungerford, MS, *Rochester Institute of Technology*
Clinical Associate Professor

Sudarshan Jayaraman, PhD, *University of North Carolina at Chapel Hill*
Professor
Wesray Professor of Business Administration

Roy Jones, PhD, *Stanford University*
Clinical Professor

Joseph Kalmenovitz, PhD, *New York University*
Assistant Professor

Ron Kaniel, PhD, *University of Pennsylvania*
Professor
Jay S. and Jeanne P. Benet Professor of Finance

Daniel Keating, MBA, *University of Rochester*
Clinical Associate Professor

Dennis Kessler, JD, *Northwestern University*
Clinical Professor

Narayana Kocherlakota, PhD, *University of Chicago*
Professor
Lionel W. McKenzie Professor of Economics
Joint Appointment(s): College of Arts and Sciences

Alexandr Kopytov, PhD, *University of Pennsylvania*
Assistant Professor

Yukun Liu, PhD, *Yale University*
Assistant Professor
William H. Meckling Assist. Professor of Business Administration

Amanda Lohiser, PhD, *State University of New York at Buffalo*
Clinical Assistant Professor

Mitchell Lovett, PhD, *Duke University*
Professor
Interim Dean; Benjamin Forman Professor of Marketing

Mikhail Lysyakov, PhD, *University of Maryland*
Assistant Professor

Ravindra N. Mantena, PhD, *New York University*
Clinical Professor
Janice M. and Joseph T. Willett Professor of Business Administration for Teaching and Service; Interim Associate Dean of Education and Innovation; MBA Faculty Director

Andras Miklos, PhD, *Central European University*
Clinical Associate Professor

Jeanine Miklos-Thal, PhD, *University of Toulouse*
Professor
Fred H. Gowen Professor of Economics and Management

Derek Mohr, JD, *Case Western Reserve University*
Clinical Associate Professor

Liza Mohr, MA, *University of Rochester*
Clinical Associate Professor

Alan Moreira, PhD, *University of Chicago*
Associate Professor

Elena Nescio, MBA, *University of California, Berkeley*
Clinical Assistant Professor

Paul Nelson, PhD, *University of Rochester*
Clinical Professor

Robert Novy-Marx, PhD, *University of California, Berkeley*
Professor
Lori and Alan S. Zekelman Distinguished Professor of Business Administration

Samuel Ogie, MBA, *University of Rochester*
Clinical Assistant Professor

David Oliveiri, JD, *University at Buffalo*
Executive Professor

Christian Opp, PhD, *University of Chicago*
Professor

Vivek Pandey, PhD, *University of Southern California*
Assistant Professor

Elena Prager, PhD, *University of Pennsylvania*
Assistant Professor

Alex Priest, PhD, *University of Texas*
Assistant Professor

David Primo, PhD, *Stanford University*
Associate Professor
Ani and Mark Gabrellian Professor
Joint Appointment(s): College of Arts and Sciences

James Prinzi, PhD, *California Coast University*
Executive Professor

Michael Raith, PhD, *London School of Economics*
Associate Professor

Ricky Roet-Green, PhD, *Tel Aviv University*
Associate Professor

Zach Roth, MBA, *University of Rochester*
Clinical Assistant Professor

Huaxia Rui, PhD, *The University of Texas at Austin*
Professor
Xerox Professor of Computers and Information Systems

John Schloff, MBA, *Pepperdine University*
Executive Professor

Greg Shaffer, PhD, *Princeton University*
Professor
Olin Professor

Paul Shanahan, JD, *Albany Law School of Union University*
Executive Professor

Yaron Shaposhnik, PhD, *Massachusetts Institute of Technology*
Assistant Professor

Thomas Shaw, MFA, *Emerson College*
Executive Professor

Jonathan Shipley, PhD, *Texas A&M University*
Clinical Assistant Professor

Carol Shuherk,PhD, *University of Oregon*
Clinical Professor

Takeaki Sunada, PhD, *University of Pennsylvania*
Assistant Professor

Teck Yong Tan, PhD, *Columbia University*
Assistant Professor

David Tilson, PhD, *Case Western Reserve University*
Clinical Professor

Vera Tilson, PhD, *Case Western Reserve University*
Associate Professor

Heidi Tribunella, MS, *SUNY Polytechnic Institute*
Clinical Professor

Giulio Trigilia, PhD, *Warwick University*
Assistant Professor

Charles Wasley, PhD, *University of Iowa*
Professor
Joseph and Janice Willett Distinguished Scholar

Gerard Wedig, PhD, *Harvard University*
Associate Professor

Joanna Wu, PhD, *Tulane University*
Professor
Susanna and Evans Y. Lam Professor

Tianli Xia, PhD, *University of Wisconsin-Madison*
Assistant Professor

Billy Xu, PhD, *Rice University*
Assistant Professor

Pavel Zryumov, PhD, *Stanford University*
Assistant Professor

Admissions

Applying to Master's Programs

Required application materials
- Online application form
- Resume
- Two required essays (500 words)
- College transcripts
- Two professional references
- $90 application fee
- Optional: GMAT or GRE test results
- Optional: Video essay

Individuals looking for growth and advancement opportunities; professionals looking for well-rounded business acumen; those interested in sharpening their business knowledge in a particular area of specialization. 5 years of experience preferred. Simon's Professional MBA is a non-visa-sponsoring program.

If you have more experience or prefer online study, explore Simon's Executive MBA program

GMAT/GRE
Simon offers the option to apply without a GMAT/GRE/Executive Assessment score.

Academics

Master's Degree and Requirements

To earn the Master of Business Administration degree, students in Simon's PMBA program take 9 core courses, the required Managerial Communications course, and 10 electives, one of which must be a project course. They must have a minimum 3.0 grade-point average to complete the degree. Although not required, students may complete a specialization or minors. Students can earn a STEM designation for their MBA if 50% or more of the minimum credits required for the degree come from STEM-designated courses.

Consulting Specializations
- Strategy
- Pricing
- Technology
- Operations

Finance Specializations
- Banking
- Asset Management
- Venture Capital and Private Equity
- Corporate Finance

Marketing Specializations
- Brand Management
- Product Management

Cross-Functional Minors
- Analytics
- Innovation and Entrepreneurship
- Leadership
- Global Business
- Health Sciences Management

Functional Minors
- Accounting
- Finance
- Marketing
- Consulting: Strategy and Pricing
- Consulting: Operations and Technology

GRADUATE COURSE TITLES

***ACC 410.** Managerial Accounting and Performance Measurement
***ACC 411.** Applied Financial Statement Analysis with Data Analytics
***ACC 417.** Auditing
***ACC 418.** Taxes and Business Strategy
ACC 423. Financial Reporting I
ACC 424. Financial Reporting II
ACC 436. Research into Professional Accounting Standards
ACC 437. Basic Federal Income Tax Accounting
***ACC 438.** Auditing II – Auditing and Information Systems
***ACC 439.** Accounting Analytics for Forensics
ACC 440. Basic Income Tax – Business Entities and Gift/Estate Taxes
ACC 441. Gov/Nonprofit, Sustainable and Responsible Accounting

***ACC 447.** Reporting Analytics in Financial Markets
***BPP 426.** Macroeconomic Policy: Choices and Outcomes
BPP 433. Business Law and Policy

Warner School of Education and Human Development

Administrative Officers

Melissa Sturge-Apple
Interim Dean

Cindy Callard
Associate Dean for Academic Affairs

Samantha Daley
Associate Dean for Research

Andrea Barrett
Program Co-Chair, Educational Leadership

Brian Brent
Program Co-Chair, Educational Leadership

Kevin Meuwissen
Program Chair, Teaching and Curriculum

Bonnie Rubenstein
Program Chair, Counseling and Human Development

Committee on Graduate Studies

Warner School Admissions and Financial Aid Committee (AFAC)

The Admissions and Financial Aid Committee (AFAC) is comprised of a representative from each of the 3 program areas (Counseling and Human Development, Educational Leadership, and Teaching and Curriculum) as well as the Director of Admissions. The committee reviews all applicants to a given application cycle, reviewing both the individual faculty ranking as well as the program ranking. The charge is to review for consistency within and among the departments regarding the ranking of applicants. The AFAC committee also reviews faculty and program recommendations for merit-based financial aid.

Members

- Silvia Sorensen
- Tricia Shalka
- Hairong Shang-Butler
- Emily McGuire
- Cindy Callard (ex officio)

Warner School Academic Policy Committee (APC)

The Academic Policy Committee's charge is to review proposed new programs or major modifications to existing programs, seek input from stakeholders as needed, and make a recommendation to the Warner faculty about whether the proposed addition or change should be implemented. The committee does not review proposed new courses or modifications to existing courses, which happens at the program-area level. The committee comprises one representative from each of Warner's three program areas.

Members

- Oliver Boxell
- Manuel Rivera
- Kristen Love
- Cindy Callard (ex officio)

School Mission Statement

At the Warner Graduate School of Education and Human Development, we believe that education can transform lives and make the world more just and humane. Our purpose is integral to the University of Rochester's mission of Meliora—to make the world Ever Better. This vision informs our teaching, research and service as a research school of education, as we strive to:

- Prepare practitioners and researchers who are knowledgeable, reflective, skilled, and caring educators; who can make a difference in individual lives as well as their fields; and who are leaders and agents of change
- Generate and disseminate knowledge leading to new understandings of education and human development on which more effective educational policies and practices can be grounded
- Collaborate across disciplines, professions, and constituencies to promote change that can significantly improve education and support positive human development.

Our diverse work in each of these domains is informed by the following underlying beliefs: The improvement of education is in pursuit of social justice; development and learning shape and are shaped by the contexts in which they occur; the complexity of educational problems requires an interdisciplinary and collaborative approach; and best practices are grounded in research and theory, just as useful theory and research are informed by practice.

School-Level Graduate Awards

- Scandling Fellowship
- Doctoral Conference Presentation Awards
- Doctoral Student Dissertation Funding Support Award
- Logan R. Hazen award
- Eleanor E. Larson
- Harold L. Munson award
- Mary Ellen Burris award
- Tyll van Geel award
- Galloway George Eastman Circle Scholarship
- Alice Gosnell Sanford George Eastman Circle Scholarship
- George LaVie Schultz George Eastman Circle Scholarship
- Phyllis Vollert Wettermann George Eastman Circle Scholarship
- Kathy and James Farrar George Eastman Scholarship
- Thomas and Ellen Rusling George Eastman Scholarship
- John and Jeanine Cushman Current Use Scholarship
- Nancy J. Wendt Lang GEC Scholarship
- Dorothea Scheible McConnell Memorial Scholarship
- Cushman Scholars in Education Fund
- Allison B. Schmidt Memorial Scholarship Fund
- Loretta and William Ford Scholarship Fund
- Nancy Gelberg Kaplan '67 Scholarship Fund
- Herbert R. Miller Scholarship Fund
- Dan Fichtner-Anna Grum Scholarship
- Joy F. Moss Education Scholarship
- Bernice Butzer Memorial Scholarship Endowment
- Honorable Robert J. and Mary M. Stevenson Scholarship Fund
- Patricia Wheeler Endowed Scholarship
- Henry Pierson French Jr. Education Fund
- William M. and Mary C. Carpenter Scholarship Fund

Addictions Counseling

Advanced Certificate

Doug Guiffrida
Director

Overview

The Addictions Counseling Advanced Certificate program offers healthcare and mental health professionals and students additional substance use disorders and addictions treatment training to help with obtaining CASAC, or Credentialed Alcoholism and Substance Abuse Counselor, recognition.

https://www.warner.rochester.edu/degree/certificate/addictions-counseling

Graduate Faculty Information

Doug Guiffrida, PhD, *Syracuse University*
Professor

Martin Lynch, PhD, *University of Rochester, Warner School of Education*
Associate Professor

Andre Marquis, PhD, *North Texas University*
Associate Professor

Amanda McLeroy, PhD, *North Carolina A&T State University*
Assistant Professor

Bonnie Rubenstein, EdD, *University of Rochester*
Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

Required application materials

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college-level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants

and three for doctoral applicants. Letters of recommendation are managed on the online application.

- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

EDE496. Advanced Ethics in Addictions Counseling
EDF458. Supervised Internship in Mental Health Counseling
EDU553. Counselor Supervision
PSI461. Advanced Substance Use and Addictions Treatment
PSI465. Contemporary Trends in Substance Use

Adolescent Education, Foreign Languages

Master's Degree (MS) and Advanced Certificate

Kevin Meuwissen
Chair/Director

Meagan Driver
Program Director

Overview

This program prepares teachers and curricular leaders to become innovative social studies teachers, committed and able to help all students succeed.

https://www.warner.rochester.edu/degree/masters/teaching/world-languages

Graduate Faculty Information

Meagan Driver, PhD, *Georgetown*
Assistant Professor

Admissions

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- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
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- A $70 application fee is required when submitting the application.

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Applying to Master's Programs

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Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).
All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED400. Topics in Teaching and Schooling, Part 1
ED400A. Topics in Teaching and Schooling, Part 2
ED409. Language and Literacy in Education
ED415. Adolescent Development and Youth Culture (ages 10 to 20)
ED440. Urban Teaching & Leadership Seminar 1A
ED441. Urban Teaching and Leadership Seminar 1B
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED480. Second Language Acquisition and Bilingualism
EDE446. Introduction to Urban Education
EDE465FL. MS Capstone Req: Foreign Language
EDE484A. Digitally-Rich Teaching and Learning in K-12 Schools
EDF416F. Field Experiences in Secondary Schools (Foreign Languages & Latin)
EDF417F. Field Experiences in Inclusive Secondary School Settings (Foreign Languages & Latin)
EDF418F. Student Teaching in Secondary Schools A (Foreign Languages & Latin)

EDF419F. Student Teaching in Inclusive Secondary School Settings A (Foreign Languages & Latin)

EDF420F. Student Teaching in Secondary Schools B (Foreign Languages & Latin)

EDF421F. Student Teaching in Inclusive Secondary School Settings B (Foreign Languages & Latin)

EDU435. Theory and Practice in Teaching and Learning Foreign Languages and ESOL (English to Speakers of Other Languages)

EDU442. Race, Class, Gender, and Disability in American Education

EDU463. Implementing Innovation in Foreign Languages and ESOL Education

EDU498. Literacy Learning as Social Practice

Applied Behavior Analysis and Human Development

Master's Degree (MS) or Advanced Certificate

David McAdam
Program Director

Overview

The University of Rochester's programs in Applied Behavior Analysis (ABA) will prepare you to be a skilled and innovative professional. ABA is the science of human behavior. The synthesis of the principles of ABA and the framework of human development are individually powerful and generate a strong synergy. The Warner School provides a unique opportunity for the study of both disciplines.

Our ABA program prepares students to design intervention programs and to practice effective and ethically sound behavior analysis. Further, it prepares students to work with individuals with autism in schools, community agencies, and in their homes, as part of an interdisciplinary team. Finally, students receive the educational foundation to seek admission to doctoral studies, should they choose to further their education.

https://www.warner.rochester.edu/degree/masters/applied-behavior-analysis

Graduate Faculty Information

Samantha Daley, EdD, *Harvard University*
Associate Professor

David McAdam, PhD, *University of Kansas*
Associate Professor (clinical)

Silvia Sörensen, PhD, *Pennsylvania State University*
Associate Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at

least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.

- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by NCATE (National Council for Accreditation of Teacher Education) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs). We are currently working toward an upcoming national accreditation by AAQEP (Association for Advancing Quality in Educator Preparation) for the following programs:

- Teacher Preparation programs in Early Childhood Education, Elementary Education, English, Foreign Languages, Inclusion, Mathematics, Science, Social Studies, and TESOL
- Reading and Literacies
- School Administration Preparation for both the Building and District levels

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

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The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed.

Advanced Certificates and Requirements

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to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification, only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED419. Life Course Studies
ED429. Theories of Human Development
ED453. Introduction to Applied Behavior Analysis
ED457. Autism Spectrum Disorders: Characteristics and Educational Issues
ED458. Methods and Applications in Applied Behavior Analysis
EDE450. Applied Leadership
EDE454. Assessment and Treatment of Challenging Behaviors
EDE455. Research Methods in Applied Behavior Analysis
EDE456. Ethical and Professional Conduct for Behavior Analysts
EDE457. Staff Training and Performance Management
EDF453. Practicum in Applied Behavioral Analysis (0-400 hours)
EDF453A. Practicum in Applied Behavioral Analysis (401-800 hours)
EDF453B. Practicum in Applied Behavioral Analysis (801-1200 hours)
EDF453C. Practicum in Applied Behavioral Analysis (1201-1500 hours)
EDF453D. Practicum in Applied Behavioral Analysis (additional licensure hours)
EDU455. Policy and Practice in Developmental Differences
EDU466. Problem Identification and Intervention in Counseling I

Childhood Education

Master's Degree (MS) and Advanced Certificate

Kristen Love
Program Director
Kevin Meuwissen
Chair

Overview

The elementary school years are the most formative and can impact the rest of a child's schooling experience. Warner will prepare you to become an innovative elementary school teacher, committed and able to help all students succeed. If you want to complete the master's program leading to initial teaching certification full-time in 15 months, you must start the program in the summer.

https://www.warner.rochester.edu/degree/masters/teaching/elementary

Graduate Faculty Information

Kristen Love, PhD, *University of Rochester*
Assistant Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in

education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.

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Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation; (2) must have received a grade of B or higher; and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification, only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED400. Topics in Teaching and Schooling, Part 1
ED400A. Topics in Teaching and Schooling, Part 2
ED404. Teaching, Curriculum, and Change
ED405. Assessment in Instructional Contexts
ED406. Master's Research Methods
ED409. Language and Literacy in Education
ED437. Diversity and Equity in Higher Education
ED446. Collaborative Teaching Partnerships in Inclusive Classrooms
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED457. Autism Spectrum Disorders: Characteristics and Educational Issues

ED491. Independent Study in Education -Master's Level (variable credits)
ED516. Designing and Evaluating Professional Development
ED582. Critical Literacy
EDE422. Motivation in Human Development
EDE436. Diversity and Equity in Education
EDE465EL. MS Capstone Req: Elementary
EDE476. Teaching English Learners in Content Classrooms
EDE477. Teaching and Learning in the Content Areas
EDE484. Online Teaching and Learning
EDF404. Field Experiences in Elementary Schools
EDF405. Field Experiences in Inclusive Elementary School Settings
EDF406. Student Teaching in Elementary Schools A
EDF407. Student Teaching in Inclusive Elementary School Settings A
EDF408. Student Teaching in Elementary Schools B
EDF409. Student Teaching in Inclusive Elementary School Settings B
EDF440C. Field Experiences in Kindergarten Settings
EDF441C. Field Experience in Inclusive Kindergarten Settings
EDU414. American Educational and Linguistic Practices
EDU427. Theory and Practice in Teaching and Learning Literacy in School
EDU428. Theory and Practice in Teaching and Learning Social Studies in Elementary School
EDU429. Theory and Practice in Teaching and Learning Science in Elementary School
EDU430. Theory and Practice in Teaching and Learning Mathematics in Elementary School
EDU433. Integrating Social Studies and Literacy
EDU442. Race, Class, Gender, and Disability in American Education
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU480. Theory and Practice Teaching Arts Elementary
EDU482. Integrating Mathematics and Literacy
EDU487. Integrating Science and Literacy
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU498. Literacy Learning as Social Practice

Computer Science Education

Master's Degree (MS) and Advanced Certificate

Zenon Borys
Program Director

Kevin Meuwissen
Chair

Overview

Computer science teachers play a critical role in preparing students for a world and workplaces immersed in technology, where people work creatively with computers to identify and solve problems. As one of the few institutions in New York State offering a teacher certification program in K-12 Computer Science, the Warner School will prepare you to be a pioneer in this field.

https://www.warner.rochester.edu/degree/masters/teaching/computer-science

Graduate Faculty Information

Zenon Borys, PhD, *University of Rochester*
Assistant Professor (clinical)

Admissions

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Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All of these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

GRADUATE COURSE TITLES

ED400. Topics in Teaching and Schooling, Part 1
ED400A. Topics in Teaching and Schooling, Part 2
ED415. Adolescent Development and Youth Culture (ages 10 to 20)
ED440. Urban Teaching & Leadership Seminar 1A
ED441. Urban Teaching and Leadership Seminar 1B
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED480. Second Language Acquisition and Bilingualism
EDE446. Introduction to Urban Education
EDE465CS. MS Capstone Req: Computer Science
EDE476. Teaching English Learners in Content Classrooms
EDE484A. Digitally-Rich Teaching and Learning in K-12 Schools
EDE498A. Integrating Computer Science Standards across the Curriculum
EDF435A. Field Experiences in Computer Science K-12 A
EDF435B. Field Experiences in Computer Science B
EDF436. Student Teaching in Computer Science
EDU437. Theory & Practice in Teaching & Learning Computer Science
EDU442. Race, Class, Gender, and Disability in American Education
EDU498. Literacy Learning as Social Practice

Counseling and Counselor Education

Doctoral Degree (EdD)

Doug Guiffrida
Program Director

Overview

The Counseling and Human Development program develops and advances school and mental health counselors, behavior analysts, counselor educators, researchers, and change agents in community and healthcare contexts. The program focuses on promoting well-being and growth across the lifespan among individuals, families, and communities.

https://www.warner.rochester.edu/degree/doctorate/counseling

Graduate Faculty Information

Oliver Boxell, PhD, *University of Rochester, Warner School of Education*
Assistant Professor (clinical)

Marissa Davala, PhD, *Kent State*
Assistant Professor (clinical)

Doug Guiffrida, PhD, *Syracuse University*
Professor

Martin Lynch, PhD, *University of Rochester, Warner School of Education*
Associate Professor

Andre Marquis, PhD, *North Texas University*
Professor

Amanda McLeroy, PhD, *North Carolina A&T State University*
Assistant Professor

Bonnie Rubenstein, EdD, *University of Rochester*
Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Doctoral Programs

Applications are accepted to the PhD program only one time per year, in our December cycle. Applications are accepted to the EdD program on a rolling basis within any of our priority deadlines. Applications to the Doctoral programs are required to submit all of the materials described above. Doctoral applications require 3 letters of recommendation.

Academics

Doctoral Degrees and Requirements

The Warner School offers two types of doctoral programs: Doctor of Philosophy (PhD) and Doctor of Education (EdD). The PhD program is designed specifically to prepare students for careers devoted to research and scholarship, particularly in a university environment. The EdD is designed to enable outstanding professionals to apply research to their field of practice.

Both degree programs require 90 credit hours (96 for students specializing in counseling). Students who have already undertaken relevant graduate-level coursework may be allowed to transfer it to their program (up to a limit of 30 credits for PhD students and 36 credits for EdD students) provided that: (1) the course(s) in question was taken within 10 years of the date of matriculation; (2) a grade of "B" or higher was earned; (3) they are approved by the student's advisor, program chair, and associate dean of graduate studies. If the courses were completed more

than 10 years ago, students are required to submit a curriculum vitae and written narrative, describing how they have remained involved in their field of study, to help the advisor, chair, and associate dean to determine whether exceptions could be made. Transfer credit decisions are made at the time of approving each student's program of study. Courses taken at institutions other than the University of Rochester after matriculation into the doctoral program may not be used toward the doctoral degree.

In addition to coursework, doctoral students also need to successfully complete a set of milestone experiences. First, after having completed at least 18 credits in the program, all doctoral students must submit a portfolio for review. The portfolio review is evaluative, with feedback offered by faculty that is intended to nurture developing research expertise and intellectual and professional development. After passing the portfolio assessment and having completed most of the coursework for the degree, all doctoral students undertake an individualized comprehensive examination. Specific requirements for the comprehensive exam vary by program area. Finally, all doctoral programs culminate in the completion of a doctoral dissertation.

Advancement to candidacy for the PhD or EdD degree occurs upon successful defense of the dissertation proposal. The degree is awarded after completion of all degree requirements, and upon successful oral defense and acceptance of the doctoral dissertation.

All work for the doctoral degree, including the final oral examination on the dissertation, must be completed within seven years from the date of initial registration. Students with 30–36 credit hours accepted in the doctoral program must complete all work within six years from the date of matriculation in the doctoral program. Students who for good reason have been unable to complete a program within the above stated limits may, upon recommendation by the faculty advisor and the program chair, petition the associate dean of graduate studies for an extension of time. Such extension, if granted, will be of limited duration, must be re-approved at least biannually, and it may require additional coursework.

Students must maintain continuous registration through the program. Full-time students must register for at least 9 credit hours during every fall and spring semester (excluding summer session) until the degree program is completed. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the program degree is completed.

PhD in Education

The Warner School offers several areas of study within the PhD in Education. Students may concentrate in one of the following areas: Counseling and Counselor Education; Educational Policy and Theory; Higher Education; Human Development; and Teaching, Curriculum, and Change. PhD dissertations should provide an original and scholarly contribution to research in the student's major field. A minimum of one year full- or part-time residency is required of all PhD students.

Doctor of Education Degrees

The Warner School offers four EdD programs with additional concentrations in the following areas: K–12 Educational Administration; Higher Education; Teaching and Curriculum; Mental Health Counseling and Supervision; Counseling; and Human Development. There is no minimum residency requirement for this program, although students are strongly encouraged to make arrangements so that they can devote the necessary time to their dissertation.

Students completing the EdD in Mental Health Counseling and Supervision are automatically eligible for the New York State mental health counseling license. Students graduating from this program would be eligible for a New York State limited permit and would need to complete 3,000 postgraduation supervised practice hours and pass the state examination to become a fully Licensed Mental Health Counselor (LMHC).

The Warner School offers an accelerated option for EdD students who are experienced practitioners in their field of specialization and want to pursue the degree part time while holding a professional job in the same field, with a specially structured and supported yearlong dissertation cohort process. This option makes it possible for eligible students to earn a doctorate in education in as few as three years on a part-time basis for most EdD programs. Additional admission criteria and program requirements must be met by students choosing the accelerated option. Courses listed below may not include all electives eligible for this program.

GRADUATE COURSE TITLES

ED418. The Family and Social Dynamics
ED481. School, Family, and Community Relations
ED504. Quantitative Research Methods
ED505. Advanced Quantitative Research Methods
ED506. Concepts and Issues in Social Science Research
ED507. Qualitative Research Methods
ED520. Program Evaluation
ED523. Mixed Research Methods
ED527. Advanced Qualitative Research Methods
ED528. Using Quantitative Data Analysis Software (1 credit)
ED561A. Counseling & Human Development Doctoral Cohort Seminar 1A
ED561B. Counseling & Human Development Doctoral Cohort Seminar 1B
ED561C. Counseling & Human Development Doctoral Cohort Seminar 1C
ED562A. Counseling & Human Development Doctoral Cohort Seminar 2A
ED562B. Counseling & Human Development Doctoral Cohort Seminar 2B

ED562C. Counseling & Human Development Doctoral Cohort Seminar 2C
ED563. Counseling & Human Development Dissertation Proposal Seminar
ED564. Counseling & Human Development Dissertation Seminar I
ED565. Counseling & Human Development Dissertation Seminar II
ED593. Ed.D. Research (Dissertation) (variable credits)
EDE422. Motivation in Human Development
EDE555. Comprehensive Exam Research: Counseling & Human Development PhD
EDE556. Comprehensive Exam Research: Counseling & Human Development EdD
EDE562. Portfolio Review: Counseling & Human Development
EDF558. Supervised Internship in Counselor Education I (Doctoral)
EDF559. Supervised Internship in Counselor Education II (Doctoral)
EDU455. Policy and Practice in Developmental Differences
EDU479. Promoting Mental Health in Midlife and Old Age
EDU494. Adult Development and Aging
EDU510. Working with Clients Defenses: Psychodynamic and other Emotion-Focused Approaches
EDU514. Mind/Body Approaches to Healing Chronic Pain
EDU552. Counselor Education
EDU553. Counselor Supervision
EDU554. Advanced Theory, Research, and Practice in Group Work
EDU555. Advanced Counseling Theory, Research, and Practice
EDU557. Selected Theories of Human Development
EDU560. Research in Cognitive Development
EDU563. Advocacy, Consulting, and Systems Change as Counseling and Human Development Practice
EDU564. Contemporary Trends in Mental Health, Appraisal, Intervention and Research
EDU565. Research in Life Course Studies
EDU572. Development of Selves

Digitally Rich Teaching in K–12 Schools

Advanced Certificate

David Miller
Program Director

Overview

Even before the COVID-19 pandemic, schools around the world were starting to incorporate tablets and other devices into the classroom to transform teaching practices and deliver more engaging, interactive learning. With the pandemic, online learning has become a necessity in most K-12 schools—at least for some of the time. Learn how to leverage digital technologies both within a K-12 classroom and remotely by pursuing Warner's Advanced Certificate in Digitally Rich Teaching in K-12 Schools, one of only a few programs of its kind in the country, as a stand-alone program or in conjunction with other Warner degree programs.

https://www.warner.rochester.edu/degree/certificate/digitally-rich-teaching

Graduate Faculty Information

Raffaella Borasi, PhD, *University at Buffalo*
Professor
Frederica Warner Professor of Education

David Miller, EdD, *University of Rochester*
Associate Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is

generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.

- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

EDE422. Motivation in Human Development
EDE477. Teaching and Learning in the Content Areas
EDE484A. Digitally-Rich Teaching and Learning in K-12 Schools
EDE492. Integrating Technology in Teaching Content Areas
EDE546. Teaching & Learning STEM
EDF490. Practicum in K12 Digitally Rich Teaching
EDU427A. Theory and Practice in Teaching & Learning Literacy (for non-Elementary Teaching Candidates)
EDU430. Theory and Practice in Teaching and Learning Mathematics in Elementary School
EDU431. Theory and Practice in Teaching and Learning English
EDU432. Theory and Practice in Teaching and Learning Social Studies
EDU434. Theory and Practice in Teaching and Learning Science
EDU435. Theory and Practice in Teaching and Learning Foreign Languages and ESOL (English to Speakers of Other Languages)
EDU436. Theory and Practice in Teaching and Learning Mathematics
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU522. Theory and Research in Learning
EDU523. Theory and Research in Teaching
EDU552. Counselor Education
EDU581. Clinical Teaching in Health Care Professions Education: Teaching and Instructional Methods

Early Childhood Education

Master's Degree (MS) or Advanced Certificate

Kristen Love
Program Director
Kevin Meuwissen
Chair

Overview

The first years of a child's life are the most formative and impactful. Warner will prepare you to become an innovative early childhood educator, committed and able to help all your students learn and grow.

Our teacher preparation programs offer the shortest path to New York State initial and professional teaching certification. If you want to complete the master's program leading to initial teaching certification full-time in 15 months, you must start the program in the summer.

https://www.warner.rochester.edu/degree/masters/teaching/early-childhood

Graduate Faculty Information

Kristen Love, PhD, *University of Rochester*
Assistant Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Advanced Certificates

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).
All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and

(3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification, only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED400. Topics in Teaching and Schooling, Part 1
ED400A. Topics in Teaching and Schooling, Part 2
ED405. Assessment in Instructional Contexts
ED406. Master's Research Methods
ED407C. Development, Learning, and Teaching for Children Ages Birth to 5
ED409. Language and Literacy in Education
ED437. Diversity and Equity in Higher Education
ED446. Collaborative Teaching Partnerships in Inclusive Classrooms
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED457. Autism Spectrum Disorders: Characteristics and Educational Issues
ED491. Independent Study in Education -Master's Level (variable credits)
ED516. Designing and Evaluating Professional Development
ED582. Critical Literacy
EDE422. Motivation in Human Development
EDE436. Diversity and Equity in Education
EDE465EC. MS Capstone Req: Early Childhood
EDE476. Teaching English Learners in Content Classrooms
EDE477. Teaching and Learning in the Content Areas
EDE484. Online Teaching and Learning
EDF404. Field Experiences in Elementary Schools
EDF405. Field Experiences in Inclusive Elementary School Settings
EDF406. Student Teaching in Elementary Schools A
EDF407. Student Teaching in Inclusive Elementary School Settings A
EDF408. Student Teaching in Elementary Schools B
EDF409. Student Teaching in Inclusive Elementary School Settings B
EDF440C. Field Experiences for Children in Kindergarten Settings
EDF441C. Field Experiences for Children in Kindergarten Inclusive Settings
EDF442. Student Teaching with Preschool Children
EDF443. Student Teaching with Preschool Children in Inclusive Settings
EDU414. American Educational and Linguistic Practices
EDU427. Theory and Practice in Teaching and Learning Literacy in School
EDU428. Theory and Practice in Teaching and Learning Social Studies in Elementary School
EDU429. Theory and Practice in Teaching and Learning Science in Elementary School
EDU430. Theory and Practice in Teaching and Learning Mathematics in Elementary School
EDU440. Children's Literature and Literacy Learning
EDU442. Race, Class, Gender, and Disability in American Education
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU467. Language, Literacy, and Cognitive Development
EDU475. Early Interventions for Children with Disabilities (ages 3 to 5)
EDU476. Early Intervention for Children with Disabilities (ages birth to 3)
EDU480. Theory and Practice Teaching Arts Elementary
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU498. Literacy Learning as Social Practice

Education Policy

Doctoral Degree (PhD) and Master's Degree (MS)

Andrea Barrett
Program Co-Chair

Brian Brent
Program Co-Chair

Karen DeAngelis
Program Director

Overview

Our master's degree in education policy will help you serve as a catalyst for change, preparing you to be successful in influencing and leading policy creation and implementation across diverse educational settings.

Whether you want to become a faculty member in educational policy, pursue positions in research or policy agencies, or contribute new knowledge about educational or public policy, Warner's flexible doctoral program in educational policy will help you achieve your goals.

https://www.warner.rochester.edu/degree/masters/education-policy

https://www.warner.rochester.edu/degree/doctorate/education-policy

Graduate Faculty Information

Andrea Barrett, EdD, *University of Rochester*
Assistant Professor (clinical)

Brian Brent, PhD, *Cornell University*
Professor
Earl B. Taylor Professor of Education

Karen DeAngelis, PhD, *Stanford University*
Associate Professor

Tricia Shalka, PhD, *The Ohio State University*
Associate Professor

Admissions

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Doctoral Programs

Applications are accepted to the PhD program only one time per year, in our December cycle. Applications are accepted to the EdD program on a rolling basis within any of our priority deadlines. Applications to the Doctoral programs are required to submit all of the materials described above. Doctoral applications require 3 letters of recommendation.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Academics

Doctoral Degrees and Requirements

The Warner School offers two types of doctoral programs: Doctor of Philosophy (PhD) and Doctor of Education (EdD). The PhD program is designed specifically to prepare students for careers devoted to research and scholarship, particularly in a university environment. The EdD is designed to enable outstanding professionals to apply research to their field of practice.

Both degree programs require 90 credit hours (96 for students specializing in counseling). Students who have already undertaken relevant graduate-level coursework may be allowed to transfer it to their program (up to a limit of 30 credits for PhD students and 36 credits for EdD students) provided that: (1) the course(s) in question was taken within 10 years of the date of matriculation; (2) a grade of "B" or higher was earned; (3) they are approved by the student's advisor, program chair, and associate

dean of graduate studies. If the courses were completed more than 10 years ago, students are required to submit a curriculum vitae and written narrative, describing how they have remained involved in their field of study, to help the advisor, chair, and associate dean to determine whether exceptions could be made. Transfer credit decisions are made at the time of approving each student's program of study. Courses taken at institutions other than the University of Rochester after matriculation into the doctoral program may not be used toward the doctoral degree.

In addition to coursework, doctoral students also need to successfully complete a set of milestone experiences. First, after having completed at least 18 credits in the program, all doctoral students must submit a portfolio for review. The portfolio review is evaluative, with feedback offered by faculty that is intended to nurture developing research expertise and intellectual and professional development. After passing the portfolio assessment and having completed most of the coursework for the degree, all doctoral students undertake an individualized comprehensive examination. Specific requirements for the comprehensive exam vary by program area. Finally, all doctoral programs culminate in the completion of a doctoral dissertation.

Advancement to candidacy for the PhD or EdD degree occurs upon successful defense of the dissertation proposal. The degree is awarded after completion of all degree requirements, and upon successful oral defense and acceptance of the doctoral dissertation.

All work for the doctoral degree, including the final oral examination on the dissertation, must be completed within seven years from the date of initial registration. Students with 30–36 credit hours accepted in the doctoral program must complete all work within six years from the date of matriculation in the doctoral program. Students who for good reason have been unable to complete a program within the above stated limits may, upon recommendation by the faculty advisor and the program chair, petition the associate dean of graduate studies for an extension of time. Such extension, if granted, will be of limited duration, must be re-approved at least biannually, and it may require additional coursework.

Students must maintain continuous registration through the program. Full-time students must register for at least 9 credit hours during every fall and spring semester (excluding summer session) until the degree program is completed. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the program degree is completed.

PhD in Education

The Warner School offers several areas of study within the PhD in Education. Students may concentrate in one of the following areas: Counseling and Counselor Education; Educational Policy and Theory; Higher Education; Human Development; and Teaching, Curriculum, and Change. PhD dissertations should provide an original and scholarly contribution to research in the student's major field. A minimum of one year full- or part-time residency is required of all PhD students.

The Warner School offers an accelerated option for EdD students who are experienced practitioners in their field of specialization and want to pursue the degree part time while holding a professional job in the same field, with a specially structured and supported yearlong dissertation cohort process. This option makes it possible for eligible students to earn a doctorate in education in as few as three years on a part-time basis for most EdD programs. Additional admission criteria and program requirements must be met by students choosing the accelerated option.

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary

to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED412. Sociology of Education
ED413. Student Affairs Administration: Academic Support Services
ED418. The Family and Social Dynamics
ED419. Life Course Studies
ED425. Minority Youth Development in Urban Contexts
ED430. College Retention: Theory, Research, and Practice
ED432. Professional Writing and Communications
ED433. Student Affairs Administration: Admissions and Financial Aid
ED434. Student Affairs Administration: Minority Student Affairs
ED436. How Universities Work
ED437. Diversity and Equity in Higher Education
ED439. Policy Analysis in Education
ED461. The Politics of Education
ED464. State and Federal Education Policy
ED467. Student Affairs Administration: International Student Affairs
ED475. Leadership and Management in Higher Education
ED476. Administration of Student Affairs in Higher Education
ED479. Human Capital Management in Higher Education
ED481. School, Family, and Community Relations
ED482. Technology and Higher Education
ED483. Communication and Counseling Skills for Teachers, Administrators, and Other Helping Professionals
ED484. Student Affairs Administration: Residential Life
ED485. College Students and Student Development Theory
ED493. Master's Research in Education (variable credits)
ED504. Quantitative Research Methods
ED505. Advanced Quantitative Research Methods
ED506. Concepts and Issues in Social Science Research
ED507. Qualitative Research Methods
ED513. Research Writing: The Literature Review
ED520. Program Evaluation
ED521. Advanced Program Evaluation
ED523. Mixed Research Methods
ED524. Survey Design (1 credit)
ED525. Interview and Focus Group Techniques (1 credit)
ED527. Advanced Qualitative Research Methods
ED528. Using Quantitative Data Analysis Software (1 credit)
ED540. Program Evaluation Dissertation Proposal Seminar
ED541. Program Evaluation Dissertation Seminar I
ED542. Program Evaluation Dissertation Seminar II
ED543. Decision Making Dissertation Seminar I
ED544. Decision Making Dissertation Seminar II
ED546. Decision Making Dissertation Proposal Seminar
ED593. Ed.D. Research (Dissertation) (variable credits)
EDE422 Motivation in Human Development
EDE423. Spirituality, Religion, and Healing in Counseling
EDE430. Global Issues in Higher Education
EDE434. Master's Academic Writing
EDE435. Service-Learning, Higher Education, and the Public Good
EDE451. Organizational Theory: Theoretical Traditions, Future Directions
EDE461. Master's Culminating Requirement: Higher Education
EDE466. Educational Legal Theories and Policies
EDE479. Assessment, Accreditation and Accountability in Higher Education
EDE485. Student Affairs Administration: Student Activities and Fraternity/Sorority Affairs
EDE487. The Role and Function of the American Community College in Higher Education
EDE550. Comprehensive Exam Research: K12 Educational Leadership EdD
EDE551. Comprehensive Exam Research: Higher Education EdD
EDE553. Comprehensive Exam Research: Higher Education PhD
EDE554. Comprehensive Exam Research: Educational Policy & Theory PhD
EDE555. Comprehensive Exam Research: Counseling & Human Development PhD
EDE557. Comprehensive Exam Research: Teaching & Curriculum PhD
EDE560. Portfolio Review: Ed Leadership
EDE561. Portfolio Review: Teaching & Curriculum
EDE562. Portfolio Review: Counseling & Human Development
EDF497. Supervised Internship in Higher Education (variable credits)
EDF558. Supervised Internship in Counselor Education I (Doctoral)
EDF559. Supervised Internship in Counselor Education II (Doctoral)

EDU411. Education Finance Issues in K-12 School Systems
EDU413. Contemporary Issues in Education Policy
EDU416. Understanding and Managing Conflict in Professional Organizations
EDU446. Entrepreneurial Skills for Educators
EDU454. Career Counseling and Development
EDU455. Policy and Practice in Developmental Differences
EDU470. Multicultural Perspectives in Counseling
EDU479. Promoting Mental Health in Midlife and Old Age
EDU485. College Access and (In)Equity
EDU490. Higher Education Law
EDU492. Governance, Policy, and Administration of Higher Education
EDU493. History of Higher Education
EDU494. Adult Development and Aging
EDU496. Fiscal Issues in Higher Education
EDU504. Economics of Education
EDU510. Working with Clients Defenses: Psychodynamic and other Emotion-Focused Approaches
EDU514. Mind/Body Approaches to Healing Chronic Pain
EDU515. Decision Making for Educational Leaders I: Analyzing Problems in Schools and Universities
EDU516. Decision Making for Educational Leaders II: Making Decisions in Schools and Universities
EDU522. Theory and Research in Learning
EDU523. Theory and Research in Teaching
EDU526. Theory and Research in Curriculum and Change
EDU552. Counselor Education
EDU553. Counselor Supervision
EDU554. Advanced Theory, Research, and Practice in Group Work
EDU555. Advanced Counseling Theory, Research, and Practice
EDU557. Selected Theories of Human Development
EDU560. Research in Cognitive Development
EDU563. Advocacy, Consulting, and Systems Change as Counseling and Human Development Practice
EDU564. Contemporary Trends in Mental Health, Appraisal, Intervention and Research
EDU565. Research in Life Course Studies
EDU572. Development of Selves
EDU576. Contemporary Issues in Higher Education

Elementary Math Specialist (K–6)

Advanced Certificate (CAS)

Kristen Love
Program Director

Overview

The Elementary Mathematics Specialist (K–6) Advanced Certificate program is designed to prepare pre-service and certified educators for a mathematics specialist/coach position in New York State elementary schools. Although being a mathematics coach or specialist does not require certification, important skills are necessary to become an effective coach or specialist. This program can be taken as a stand-alone or as an enhancement to another Warner program and is offered fully online or through HyFlex course offerings.

https://www.warner.rochester.edu/degree/certificate/elementary-mathematics-specialist

Graduate Faculty Information

Kristen Love, PhD, *University of Rochester*
Assistant Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic

work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.

- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED431A. Content Institute: Number, Operations, and Algebraic Thinking

ED431B. Content Institute: Geometry and Measurement Concepts

ED431C. Content Institute: Rational Numbers and Proportional Reasoning

EDF434A. Elementary Mathematics Specialist: Teaching Practicum 1

EDF434B. Elementary Mathematics Specialist: Teaching Practicum 2

EDU430. Theory and Practice in Teaching and Learning Mathematics in Elementary School

English Language Arts Education

Master's Degree (MS) and Advanced Certificate

Kevin Meuwissen
Chair

Valerie Marsh
Program Director

Overview

All of the master's degree programs prepare candidates for NYS initial and professional teaching certification in Adolescence Education (Grades 7–12) as a Specialist in English Language Arts (ELA) and are offered at the graduate level only. If you want to complete the master's program leading to initial teaching certification full-time in 15 months, you must start the program in the summer.

https://www.warner.rochester.edu/degree/masters/teaching/english

Graduate Faculty Information

Valerie Marsh, PhD, *University of Rochester*
Assistant Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic

work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.

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After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Advanced Certificates and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED405. Assessment in Instructional Contexts
ED406. Master's Research Methods
ED409. Language and Literacy in Education
ED415. Adolescent Development and Youth Culture (ages 10 to 20)
ED437. Diversity and Equity in Higher Education
ED446. Collaborative Teaching Partnerships in Inclusive Classrooms
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED457. Autism Spectrum Disorders: Characteristics and Educational Issues

ED491. Independent Study in Education -Master's Level (variable credits)
ED516. Designing and Evaluating Professional Development
EDE422. Motivation in Human Development
EDE436. Diversity and Equity in Education
EDE453. Post-Secondary Transition for Youth with Significant Disabilities
EDE465E. MS Capstone Req: English
EDE476. Teaching English Learners in Content Classrooms
EDE477. Teaching and Learning in the Content Areas
EDE484. Online Teaching and Learning
EDU414. American Educational and Linguistic Practices
EDU428. Theory and Practice in Teaching and Learning Social Studies in Elementary School
EDU432. Theory and Practice in Teaching and Learning Social Studies
EDU433. Integrating Social Studies and Literacy
EDU442. Race, Class, Gender, and Disability in American Education
EDU462. Implementing Innovation in Social Studies Education
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU498. Literacy Learning as Social Practice
EDU499. Integrating Social Studies and Technology

Health Professions Education

Master's Degree (MS), Advanced Certificate and Doctoral

Raffaella Borasi
Program Director

Overview

These innovative, interdisciplinary, and interprofessional programs—a collaboration of the University of Rochester Schools of Education, Nursing, and Medicine & Dentistry—offer healthcare professionals unique opportunities to leverage their clinical experience and perspectives and to gain education skills, with the ultimate goal of improving patient care.

Graduates of our Health Professions Education programs emerge as aspiring and inspiring leaders. They are well prepared to lead in an ever-changing healthcare environment and well positioned to succeed in ever-expanding roles and careers within traditional healthcare education and training environments, as well as in emerging healthcare delivery channels.

Our flexible doctoral program in Health Professions Education will allow you to capitalize on a set of interdisciplinary courses in health professions education, as well as work with faculty in the Warner School of Education and the University of Rochester Medical Center, engaging in projects involving health care and education. Additionally, our new fully online EdD option can be completed from a distance.

These programs are designed to prepare the best and the brightest health profession educators, leveraging state-of-the-art research and best practices at the intersection of health and education to significantly influence the future of health care.

https://www.warner.rochester.edu/degree/masters/health-professions-education

https://www.warner.rochester.edu/degree/doctorate/health-professions-education

Graduate Faculty Information

Raffaella Borasi, PhD, *SUNY, Buffalo*
Professor
Frederica Warner Professor of Education
Primary Appointment(s): Teaching and Curriculum

Eric Fredericksen, EdD, *University of Rochester*
Professor

Tricia Shalka, PhD, *Ohio State University*
Associate Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

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Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Applying to Doctoral Programs

Applications are accepted to the PhD program only one time per year, in our December cycle. Applications are accepted to the EdD program on a rolling basis within any of our priority deadlines. Applications to the Doctoral programs are required to submit all of the materials described above. Doctoral applications require 3 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring

semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

Doctoral Degrees and Requirements

The Warner School offers two types of doctoral programs: Doctor of Philosophy (PhD) and Doctor of Education (EdD). The PhD program is designed specifically to prepare students for careers devoted to research and scholarship, particularly in a university environment. The EdD is designed to enable outstanding professionals to apply research to their field of practice.

Both degree programs require 90 credit hours (96 for students specializing in counseling). Students who have already undertaken relevant graduate-level coursework may be allowed to transfer it to their program (up to a limit of 30 credits for PhD students and 36 credits for EdD students) provided that: (1) the course(s) in question was taken within 10 years of the date of matriculation; (2) a grade of "B" or higher was earned; (3) they are approved by the student's advisor, program chair, and associate dean of graduate studies. If the courses were completed more than 10 years ago, students are required to submit a curriculum vitae and written narrative, describing how they have remained involved in their field of study, to help the advisor, chair, and associate dean to determine whether exceptions could be made. Transfer credit decisions are made at the time of approving each student's program of study. Courses taken at institutions other than the University of Rochester after matriculation into the doctoral program may not be used toward the doctoral degree.

In addition to coursework, doctoral students also need to successfully complete a set of milestone experiences. First, after having completed at least 18 credits in the program, all doctoral students must submit a portfolio for review. The portfolio review is evaluative, with feedback offered by faculty that is intended to nurture developing research expertise and intellectual and professional development. After passing the portfolio assessment and having completed most of the coursework for the degree, all doctoral students undertake an individualized comprehensive examination. Specific requirements for the comprehensive exam vary by program area. Finally, all doctoral programs culminate in the completion of a doctoral dissertation.

Advancement to candidacy for the PhD or EdD degree occurs upon successful defense of the dissertation proposal. The degree is awarded after completion of all degree requirements, and upon successful oral defense and acceptance of the doctoral dissertation.

All work for the doctoral degree, including the final oral examination on the dissertation, must be completed within seven years from the date of initial registration. Students with 30–36 credit hours accepted in the doctoral program must complete all work within six years from the date of matriculation in the doctoral program. Students who for good reason have been unable to complete a program within the above stated limits may, upon recommendation by the faculty advisor and the program chair, petition the associate dean of graduate studies for an extension of time. Such extension, if granted, will be of limited duration, must be re-approved at least biannually, and it may require additional coursework.

Students must maintain continuous registration through the program. Full-time students must register for at least 9 credit hours during every fall and spring semester (excluding summer session) until the degree program is completed. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the program degree is completed.

Doctor of Education Degrees

The Warner School offers four EdD programs with additional concentrations in the following areas: K–12 Educational Administration; Higher Education; Teaching and Curriculum; Mental Health Counseling and Supervision; Counseling; and Human Development. There is no minimum residency requirement for this program, although students are strongly encouraged to make arrangements so that they can devote the necessary time to their dissertation.

The Warner School offers an accelerated option for EdD students who are experienced practitioners in their field of specialization and want to pursue the degree part time while holding a professional job in the same field, with a specially structured and supported yearlong dissertation cohort process. This option makes it possible for eligible students to earn a doctorate in education in as few as three years on a part-time basis for most EdD programs. Additional admission criteria and program requirements must be met by students choosing the accelerated option.

GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED547. HPE Proposal Seminar
ED548. HPE Dissertation Seminar I
ED549. HPE Dissertation Seminar II
EDE436. Diversity and Equity in Education
EDE437. Diversity and Equity in Health Professions Education
EDE467. MS Capstone Req: Health Professions

EDE563. Portfolio Review: Health Professions Education
EDE569. Interprofessional Education in Health Professions
EDE570. Leadership in Health Professions Education
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU580. Foundations of Health Professions Education
EDU581. Clinical Teaching in Health Care Professions Education: Teaching and Instructional Methods

Higher Education

Doctoral Degree (PhD/EdD) and Master's Degree (MS)

Andrea Barrett
Co-Chair, Program Director
Brian Brent
Program Co-Chair

Overview

Our programs in Higher Education energize students to take higher education to new heights. We provide students interested in beginning or advancing a career in higher education with a foundation in institutional culture.

Whether you want to become a faculty member in higher education, pursue leadership positions in colleges and universities, or contribute new knowledge about higher education, Warner's flexible doctoral programs in higher education will help you achieve your goals.

https://www.warner.rochester.edu/degree/masters/higher-education

https://www.warner.rochester.edu/degree/doctorate/higher-education

Graduate Faculty Information

Andrea Barrett, EdD, *University of Rochester*
Assistant Professor (clinical)

Claire Boeck, PhD, *Michigan*
Assistant Professor

Brian Brent, PhD, *Cornell University*
Professor
Earl B. Taylor Professor of Education

Karen DeAngelis, PhD, *Stanford University*
Associate Professor

Tricia Shalka, PhD, *Ohio State University*
Associate Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education

are required if admitted to the program, within the first semester the student enrolls.

- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Doctoral Programs

Applications are accepted to the PhD program only one time per year, in our December cycle. Applications are accepted to the EdD program on a rolling basis within any of our priority deadlines. Applications to the Doctoral programs are required to submit all of the materials described above. Doctoral applications require 3 letters of recommendation.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Academics

Doctoral Degrees and Requirements

The Warner School offers two types of doctoral programs: Doctor of Philosophy (PhD) and Doctor of Education (EdD). The PhD program is designed specifically to prepare students for careers devoted to research and scholarship, particularly in a university environment. The EdD is designed to enable outstanding professionals to apply research to their field of practice.

Both degree programs require 90 credit hours (96 for students specializing in counseling). Students who have already undertaken relevant graduate-level coursework may be allowed to transfer it to their program (up to a limit of 30 credits for PhD students and 36 credits for EdD students) provided that: (1) the course(s) in question was taken within 10 years of the date of matriculation; (2) a grade of "B" or higher was earned; (3) they are approved by the student's advisor, program chair, and associate dean of graduate studies. If the courses were completed more than 10 years ago, students are required to submit a curriculum vitae and written narrative, describing how they have remained involved in their field of study, to help the advisor, chair, and associate dean to determine whether exceptions could be made. Transfer credit decisions are made at the time of approving each student's program of study. Courses taken at institutions other than the University of Rochester after matriculation into the doctoral program may not be used toward the doctoral degree.

In addition to coursework, doctoral students also need to successfully complete a set of milestone experiences. First, after having completed at least 18 credits in the program, all doctoral students must submit a portfolio for review. The portfolio review is evaluative, with feedback offered by faculty that is intended to nurture developing research expertise and intellectual and professional development. After passing the portfolio assessment and having completed most of the coursework for the degree, all doctoral students undertake an individualized comprehensive examination. Specific requirements for the comprehensive exam vary by program area. Finally, all doctoral programs culminate in the completion of a doctoral dissertation.

Advancement to candidacy for the PhD or EdD degree occurs upon successful defense of the dissertation proposal. The degree is awarded after completion of all degree requirements, and upon successful oral defense and acceptance of the doctoral dissertation.

All work for the doctoral degree, including the final oral examination on the dissertation, must be completed within seven years from the date of initial registration. Students with 30–36 credit hours accepted in the doctoral program must complete all work within six years from the date of matriculation in the doctoral program. Students who for good reason have been unable to complete a program within the above stated limits may, upon recommendation by the faculty advisor and the program chair, petition the associate dean of graduate studies for an extension of time. Such extension, if granted, will be of limited duration, must be re-approved at least biannually, and it may require additional coursework.

Students must maintain continuous registration through the program. Full-time students must register for at least 9 credit hours during every fall and spring semester (excluding summer session) until the degree program is completed. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the program degree is completed.

PhD in Education

The Warner School offers several areas of study within the PhD in Education. Students may concentrate in one of the following areas: Counseling and Counselor Education; Educational Policy and Theory; Higher Education; Human Development; and Teaching, Curriculum, and Change. PhD dissertations should provide an original and scholarly contribution to research in the student's major field. A minimum of one year full- or part-time residency is required of all PhD students.

Doctor of Education Degrees

The Warner School offers four EdD programs with additional concentrations in the following areas: K–12 Educational Administration; Higher Education; Teaching and Curriculum; Mental Health Counseling and Supervision; Counseling; and Human Development. There is no minimum residency requirement for this program, although students are strongly encouraged to make arrangements so that they can devote the necessary time to their dissertation.

Students completing the EdD in Mental Health Counseling and Supervision are automatically eligible for the New York State mental health counseling license. Students graduating from this program would be eligible for a New York State limited permit and would need to complete 3,000 postgraduation supervised practice hours and pass the state examination to become a fully Licensed Mental Health Counselor (LMHC).

The Warner School offers an accelerated option for EdD students who are experienced practitioners in their field of specialization and want to pursue the degree part time while holding a professional job in the same field, with a specially structured and supported yearlong dissertation cohort process. This option makes it possible for eligible students to earn a doctorate in education in as few as three years on a part-time basis for most EdD programs. Additional admission criteria and program requirements must be met by students choosing the accelerated option.

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by NCATE (National Council for Accreditation of Teacher Education) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed.

GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED413. Student Affairs Administration: Academic Support Services
ED418. The Family and Social Dynamics
ED419. Life Course Studies
ED430. College Retention: Theory, Research, and Practice
ED432. Professional Writing and Communications
ED433. Student Affairs Administration: Admissions and Financial Aid
ED436. How Universities Work
ED437. Diversity and Equity in Higher Education
ED439. Policy Analysis in Education
ED461. The Politics of Education
ED464. State and Federal Education Policy
ED467. Student Affairs Administration: International Student Affairs

ED475. Leadership and Management in Higher Education
ED476. Administration of Student Affairs in Higher Education
ED479. Human Capital Management in Higher Education
ED483. Communication and Counseling Skills for Teachers, Administrators, and Other Helping Professionals
ED484. Student Affairs Administration: Residential Life
ED485. College Students and Student Development Theory
ED493. Master's Research in Education (variable credits)
ED504. Quantitative Research Methods
ED505. Advanced Quantitative Research Methods
ED506. Concepts and Issues in Social Science Research
ED507. Qualitative Research Methods
ED513. Research Writing: The Literature Review
ED520. Program Evaluation
ED521. Advanced Program Evaluation
ED523. Mixed Research Methods
ED524. Survey Design (1 credit)
ED525. Interview and Focus Group Techniques (1 credit)
ED527. Advanced Qualitative Research Methods
ED528. Using Quantitative Data Analysis Software (1 credit)
ED540. Program Evaluation Dissertation Proposal Seminar
ED541. Program Evaluation Dissertation Seminar I
ED542. Program Evaluation Dissertation Seminar II
ED543. Decision Making Dissertation Seminar I
ED544. Decision Making Dissertation Seminar II
ED546. Decision Making Dissertation Proposal Seminar
ED593. Ed.D. Research (Dissertation) (variable credits)
EDE422. Motivation in Human Development
EDE423. Spirituality, Religion, and Healing in Counseling
EDE430. Global Issues in Higher Education
EDE434. Master's Academic Writing
EDE435. Service-Learning, Higher Education, and the Public Good
EDE451. Organizational Theory: Theoretical Traditions, Future Directions
EDE461. Master's Culminating Requirement: Higher Education
EDE466. Educational Legal Theories and Policies
EDE479. Assessment, Accreditation and Accountability in Higher Education
EDE485. Student Affairs Administration: Student Activities and Fraternity/Sorority Affairs
EDE487. The Role and Function of the American Community College in Higher Education
EDE550. Comprehensive Exam Research: K12 Educational Leadership EdD
EDE551. Comprehensive Exam Research: Higher Education EdD
EDE553. Comprehensive Exam Research: Higher Education PhD
EDE554. Comprehensive Exam Research: Educational Policy & Theory PhD
EDE555. Comprehensive Exam Research: Counseling & Human Development PhD
EDE557. Comprehensive Exam Research: Teaching & Curriculum PhD
EDE560. Portfolio Review: Ed Leadership
EDE561. Portfolio Review: Teaching & Curriculum
EDE562. Portfolio Review: Counseling & Human Development
EDF497. Supervised Internship in Higher Education (variable credits)
EDF558. Supervised Internship in Counselor Education I (Doctoral)
EDF559. Supervised Internship in Counselor Education II (Doctoral)
EDU411. Education Finance Issues in K-12 School Systems
EDU413. Contemporary Issues in Education Policy
EDU416. Understanding and Managing Conflict in Professional Organizations
EDU446. Entrepreneurial Skills for Educators
EDU454. Career Counseling and Development
EDU455. Policy and Practice in Developmental Differences
EDU470. Multicultural Perspectives in Counseling
EDU479. Promoting Mental Health in Midlife and Old Age
EDU485. College Access and (In)Equity
EDU490. Higher Education Law
EDU492. Governance, Policy, and Administration of Higher Education
EDU493. History of Higher Education
EDU494. Adult Development and Aging
EDU496. Fiscal Issues in Higher Education
EDU504. Economics of Education
EDU510. Working with Clients Defenses: Psychodynamic and other Emotion-Focused Approaches
EDU514. Mind/Body Approaches to Healing Chronic Pain
EDU515. Decision Making for Educational Leaders I: Analyzing Problems in Schools and Universities
EDU516. Decision Making for Educational Leaders II: Making Decisions in Schools and Universities
EDU522. Theory and Research in Learning
EDU523. Theory and Research in Teaching
EDU526. Theory and Research in Curriculum and Change
EDU552. Counselor Education
EDU553. Counselor Supervision
EDU554. Advanced Theory, Research, and Practice in Group Work
EDU555. Advanced Counseling Theory, Research, and Practice
EDU557. Selected Theories of Human Development
EDU560. Research in Cognitive Development
EDU563. Advocacy, Consulting, and Systems Change as Counseling and Human Development Practice
EDU564. Contemporary Trends in Mental Health, Appraisal, Intervention and Research
EDU565. Research in Life Course Studies
EDU572. Development of Selves
EDU576. Contemporary Issues in Higher Education

Human Development

Doctoral Degree (EdD or PhD) and Master's Degree (MS)

Silvia Sörensen
Program Director

Overview

The Counseling and Human Development program develops and advances school and mental health counselors, behavior analysts, counselor educators, researchers, and change agents in community and healthcare contexts. The program focuses on promoting well-being and growth across the lifespan among individuals, families, and communities.

https://www.warner.rochester.edu/degree/doctorate/human-development

https://www.warner.rochester.edu/degree/masters/human-development

Graduate Faculty Information

Samantha Daley, EdD, *Harvard University*
Associate Professor

Martin Lynch, PhD, *University of Rochester*
Associate Professor

David McAdam, PhD, *Kansas*
Associate Professor (clinical)
Joint Appointment(s): URMC

Silvia Sörensen, PhD, *Pennsylvania State University*
Associate Professor

Nestor Tulagan, PhD, *California Irvine*
Associate Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Applicants typically receive a decision on their application within 4 to 6 weeks from the application deadline.

Applying to Doctoral Programs

Applications are accepted to the PhD program only one time per year, in our December cycle. Applications are accepted to the EdD program on a rolling basis within any of our priority deadlines. Applications to the Doctoral programs are required to submit all of the materials described above. Doctoral applications require 3 letters of recommendation.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Academics

Doctoral Degrees and Requirements

The Warner School offers two types of doctoral programs: Doctor of Philosophy (PhD) and Doctor of Education (EdD). The PhD program is designed specifically to prepare students for careers devoted to research and scholarship, particularly in a university environment. The EdD is designed to enable outstanding professionals to apply research to their field of practice.

Both degree programs require 90 credit hours (96 for students specializing in counseling). Students who have already undertaken relevant graduate-level coursework may be allowed to transfer it to their program (up to a limit of 30 credits for PhD students and 36 credits for EdD students) provided that: (1) the course(s) in question was taken within 10 years of the date of matriculation; (2) a grade of "B" or higher was earned; (3) they are approved by the student's advisor, program chair, and associate dean of graduate studies. If the courses were completed more than 10 years ago, students are required to submit a curriculum

vitae and written narrative, describing how they have remained involved in their field of study, to help the advisor, chair, and associate dean to determine whether exceptions could be made. Transfer credit decisions are made at the time of approving each student's program of study. Courses taken at institutions other than the University of Rochester after matriculation into the doctoral program may not be used toward the doctoral degree.

In addition to coursework, doctoral students also need to successfully complete a set of milestone experiences. First, after having completed at least 18 credits in the program, all doctoral students must submit a portfolio for review. The portfolio review is evaluative, with feedback offered by faculty that is intended to nurture developing research expertise and intellectual and professional development. After passing the portfolio assessment and having completed most of the coursework for the degree, all doctoral students undertake an individualized comprehensive examination. Specific requirements for the comprehensive exam vary by program area. Finally, all doctoral programs culminate in the completion of a doctoral dissertation.

Advancement to candidacy for the PhD or EdD degree occurs upon successful defense of the dissertation proposal. The degree is awarded after completion of all degree requirements, and upon successful oral defense and acceptance of the doctoral dissertation.

All work for the doctoral degree, including the final oral examination on the dissertation, must be completed within seven years from the date of initial registration. Students with 30–36 credit hours accepted in the doctoral program must complete all work within six years from the date of matriculation in the doctoral program. Students who for good reason have been unable to complete a program within the above stated limits may, upon recommendation by the faculty advisor and the program chair, petition the associate dean of graduate studies for an extension of time. Such extension, if granted, will be of limited duration, must be re-approved at least biannually, and it may require additional coursework.

Students must maintain continuous registration through the program. Full-time students must register for at least 9 credit hours during every fall and spring semester (excluding summer session) until the degree program is completed. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the program degree is completed.

PhD in Education

The Warner School offers several areas of study within the PhD in Education. Students may concentrate in one of the following areas: Counseling and Counselor Education; Educational Policy and Theory; Higher Education; Human Development; and Teaching, Curriculum, and Change. PhD dissertations should provide an original and scholarly contribution to research in the student's major field. A minimum of one year full- or part-time residency is required of all PhD students.

Doctor of Education Degrees

The Warner School offers four EdD programs with additional concentrations in the following areas: K–12 Educational Administration; Higher Education; Teaching and Curriculum; Mental Health Counseling and Supervision; Counseling; and Human Development. There is no minimum residency requirement for this program, although students are strongly encouraged to make arrangements so that they can devote the necessary time to their dissertation.

The Warner School offers an accelerated option for EdD students who are experienced practitioners in their field of specialization and want to pursue the degree part time while holding a professional job in the same field, with a specially structured and supported yearlong dissertation cohort process. This option makes it possible for eligible students to earn a doctorate in education in as few as three years on a part-time basis for most EdD programs. Additional admission criteria and program requirements must be met by students choosing the accelerated option.

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be

submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

GRADUATE COURSE TITLES

ED406. Master's Research Methods

ED407. Development, Learning, and Teaching for Children Ages 3 to 5

ED408. Development, Learning, and Teaching for Children Ages Birth to 3

ED415. Adolescent Development and Youth Culture (ages 10 to 20)

ED418. The Family and Social Dynamics

ED419. Life Course Studies

ED429. Theories of Human Development

ED447. Disability and Schools

ED451. Teaching and Learning in Inclusive Classrooms

ED453. Introduction to Applied Behavior Analysis

ED457. Autism Spectrum Disorders: Characteristics and Educational Issues

ED458. Methods and Applications in Applied Behavior Analysis

ED483. Communication and Counseling Skills for Teachers, Administrators, and Other Helping Professionals

ED493. Master's Research in Education (variable credits)

ED496. Research Apprenticeship - Master's Level (variable credits)

ED504. Quantitative Research Methods

ED506. Concepts and Issues in Social Science Research

ED507. Qualitative Research Methods

ED520. Program Evaluation

ED528. Using Quantitative Data Analysis Software (1 credit)

ED561A. Counseling & Human Development Doctoral Cohort Seminar 1A

ED561B. Counseling & Human Development Doctoral Cohort Seminar 1B

ED561C. Counseling & Human Development Doctoral Cohort Seminar 1C

ED562A. Counseling & Human Development Doctoral Cohort Seminar 2A

ED562B. Counseling & Human Development Doctoral Cohort Seminar 2B

ED562C. Counseling & Human Development Doctoral Cohort Seminar 2C

ED563. Counseling & Human Development Dissertation Proposal Seminar

ED564. Counseling & Human Development Dissertation Seminar I

ED565. Counseling & Human Development Dissertation Seminar II

ED593. Ed.D. Research (Dissertation) (variable credits)

ED596. Research Apprenticeship -- Doctoral Level (variable credits)

EDE422. Motivation in Human Development

EDE423. Spirituality, Religion, and Healing in Counseling

EDE450. Applied Leadership

EDE454. Assessment and Treatment of Challenging Behaviors

EDE455. Research Methods in Applied Behavior Analysis

EDE456. Ethical and Professional Conduct for Behavior Analysts

EDE457. Staff Training and Performance Management

EDE464. MS Capstone Req: Human Development

EDE475. Infant Mental Health

EDE556. Comprehensive Exam Research: Counseling & Human Development EdD

EDE562. Portfolio Review: Counseling & Human Development

EDF453. Practicum in Applied Behavioral Analysis

EDF558. Supervised Internship in Counselor Education I (Doctoral)

EDU439. Interpersonal Systems in Counseling and Human Development

EDU440. Children's Literature and Literacy Learning

EDU446. Entrepreneurial Skills for Educators

EDU453. Counseling and Facilitating in Small Groups

EDU455. Policy and Practice in Developmental Differences

EDU457. Counseling Theory and Practice I

EDU464. Child Development and Learning in Context (ages 5 to 12)

EDU466. Problem Identification and Intervention in Counseling I

EDU467. Language, Literacy, and Cognitive Development

EDU470. Multicultural Perspectives in Counseling

EDU471. Counselor as Systems Consultant

EDU475. Early Interventions for Children with Disabilities (ages 3 to 5)

EDU476. Early Intervention for Children with Disabilities (ages birth to 3)

EDU479. Promoting Mental Health in Midlife and Old Age
EDU494. Adult Development and Aging
EDU510. Working with Clients Defenses: Psychodynamic and other Emotion-Focused Approaches
EDU514. Mind/Body Approaches to Healing Chronic Pain
EDU552. Counselor Education
EDU553. Counselor Supervision
EDU554. Advanced Theory, Research, and Practice in Group Work
EDU555. Advanced Counseling Theory, Research, and Practice
EDU557. Selected Theories of Human Development
EDU560. Research in Cognitive Development
EDU563. Advocacy, Consulting, and Systems Change as Counseling and Human Development Practice
EDU564. Contemporary Trends in Mental Health, Appraisal, Intervention and Research
EDU565. Research in Life Course Studies
EDU572. Development of Selves

Leadership in Disability and Inclusive Practices

Advanced Certificate

Kristen Love
Director

Overview

This certificate will prepare competent and effective K-12 school leaders, teacher leaders, and those intending to pursue K-12 school leadership to meet the needs of students with disabilities in inclusive classroom settings.

https://www.warner.rochester.edu/degree/certificate/disability-inclusion-leaders

Graduate Faculty Information

Kristen Love, PhD, *University of Rochester*
Assistant Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.

- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED447. Disability and Schools

ED456. Leadership and Special Education

EDE453. Post-Secondary Transition for Youth with Significant Disabilities

EDU455. Policy and Practice in Developmental Differences

Literacy (All Grades)

Master's Degree (MS) and Advanced Certificate

Carol St. George
Program Director

Overview

Literacy is critical to success in school and careers. Whether by working directly with students experiencing difficulties or by coaching other teachers to become more effective with their students, you can impact many students by dramatically improving their reading and literacy outcomes. Warner will prepare you to become an effective and innovative reading and literacy specialist who is committed and able to help all students succeed.

Our teacher preparation programs offer the shortest path to NYS initial and professional teaching certification and a generous tuition scholarship.

All the Warner programs described below prepare current teachers for NYS professional certification in Teaching Literacy (grades K-12) and are all offered at the graduate level only.

https://www.warner.rochester.edu/degree/masters/teaching/reading-literacy

Graduate Faculty Information

Carol Anne St. George, EdD, *University of Rochester*
Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online

application.

- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

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The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED409. Language and Literacy in Education
ED415. Adolescent Development and Youth Culture (ages 10 to 20)
ED437. Diversity and Equity in Higher Education
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED457. Autism Spectrum Disorders: Characteristics and Educational Issues
ED480. Second Language Acquisition and Bilingualism

ED490. Genesee Valley Writing Project
ED491. Independent Study in Education -Master's Level (variable credits)
ED516. Designing and Evaluating Professional Development
ED582. Critical Literacy
EDE422 Motivation in Human Development
EDE436. Diversity and Equity in Education
EDE453. Post-Secondary Transition for Youth with Significant Disabilities
EDE465R. MS Capstone Req: Reading
EDE476. Teaching English Learners in Content Classrooms
EDE477. Teaching and Learning in the Content Areas
EDE484A. Digitally-Rich Teaching and Learning in K-12 Schools
EDF422. Practica in Teaching Literacy in Elementary Schools 1
EDF424. Practica in Teaching Literacy in Secondary Schools 1
EDU414. American Educational and Linguistic Practices
EDU427. Theory and Practice in Teaching and Learning Literacy in School
EDU427A. Theory and Practice in Teaching & Learning Literacy (for non-Elementary Teaching Candidates)
EDU431. Theory and Practice in Teaching and Learning English
EDU433. Integrating Social Studies and Literacy
EDU435. Theory and Practice in Teaching and Learning Foreign Languages and ESOL (English to Speakers of Other Languages)
EDU440. Children's Literature and Literacy Learning
EDU442. Race, Class, Gender, and Disability in American Education
EDU443. Implementing Innovation in English Education
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU467. Language, Literacy, and Cognitive Development
EDU481. Integrating English and Technology
EDU482. Integrating Mathematics and Literacy
EDU487. Integrating Science and Literacy
EDU495. Theory and Practice for Reading Professionals
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU498. Literacy Learning as Social Practice

Mathematics Education

Master's Degree (MS)

Zenon Borys
Program Director

Overview

This program prepares innovative mathematics teachers to become committed and able to help all students succeed.

https://www.warner.rochester.edu/degree/masters/teaching/mathematics

Graduate Faculty Information

Raffaella Borasi, PhD, *SUNY, Buffalo*
Professor
Frederica Warner Professor of Education

Zenon Borys, PhD candidate, *University of Rochester*
Assistant Professor (clinical)

Jeffrey Choppin, PhD, *University of Wisconsin–Madison*
Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in

education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.

- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

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The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

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Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED400. Topics in Teaching and Schooling, Part 1
ED400A. Topics in Teaching and Schooling, Part 2
ED415. Adolescent Development and Youth Culture (ages 10 to 20)
ED440. Urban Teaching & Leadership Seminar 1A
ED441. Urban Teaching and Leadership Seminar 1B
ED446. Collaborative Teaching Partnerships in Inclusive Classrooms
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED480. Second Language Acquisition and Bilingualism
EDE446. Introduction to Urban Education
EDE465M. MS Capstone Req: Math (Hybrid options)
EDE476. Teaching English Learners in Content Classrooms

EDE484A. Digitally-Rich Teaching and Learning in K-12 Schools
EDF416M. Field Experiences in Secondary Schools (Math)
EDF417M. Field Experiences in Inclusive Secondary School Settings (Math)
EDF418M. Student Teaching in Secondary Schools A (Math)
EDF419M. Student Teaching in Inclusive Secondary School Settings A (Math)
EDF420M. Student Teaching in Secondary Schools B (Math)
EDF421M. Student Teaching in Inclusive Secondary School Settings B (Math)
EDU427A. Theory and Practice in Teaching & Learning Literacy
EDU430. Theory and Practice in Teaching and Learning Mathematics in Elementary School
EDU436. Theory and Practice in Teaching and Learning Mathematics
EDU442. Race, Class, Gender, and Disability in American Education
EDU444. Implementing Innovation in Mathematics Education
EDU483. Integrating Mathematics and Technology
EDU498. Literacy Learning as Social Practice

Mental Health Counseling

Master's Degree (MS), Advanced Certificate

Doug Guiffrida
Program Director

Overview

Our Council for Accreditation of Counseling & Related Educational Programs-accredited program in mental health counseling will successfully prepare students to become effective mental health counselors—counseling professionals who can help to greatly improve the quality of life of the clients served.

https://www.warner.rochester.edu/degree/masters/mental-health-counseling

Graduate Faculty Information

Oliver Boxell, PhD, *University of Rochester, Warner School of Education*
Assistant Professor (clinical)

Marissa Davala, PhD, *Kent State*
Assistant Professor (clinical)

Doug Guiffrida, PhD, *Syracuse University*
Professor

Hennessey Lustica, PhD, *University of Rochester, Warner School of Education*
Assistant Professor (clinical)

Martin Lynch, PhD, *University of Rochester, Warner School of Education*
Professor

Andre Marquis, PhD, *North Texas University*
Associate Professor
Primary Appointment(s): Counseling and Human Development

Amanda McLeroy, PhD, *North Carolina A&T State University*
Assistant Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first

semester the student enrolls.

- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

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The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

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GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED418. The Family and Social Dynamics
ED419. Life Course Studies
ED429. Theories of Human Development
EDE417. Crisis Counseling and Disaster Mental Health
EDE419. Foundations of Psychopharmacology and Biological Determinants of Mental Health
EDE422. Motivation in Human Development
EDE449. Pre-practicum in Mental Health Counseling
EDE449B. Pre-practicum in Mental Health Counseling-Bridge
EDE469. MS Mental Health Counseling Capstone Exam
EDE469T. MS Thesis: Counseling
EDF450M. Practicum in Mental Health Counseling
EDF458B. Supervised Internship in Mental Health Counseling: Bridge Program
EDF458M. Supervised Internship in Mental Health Counseling
EDU439. Interpersonal Systems in Counseling and Human Development
EDU453. Counseling and Facilitating in Small Groups
EDU454. Career Counseling and Development
EDU455. Policy and Practice in Developmental Differences
EDU457M. Counseling Theory and Practice I: Mental Health Counseling
EDU460M. Counseling Theory & Practice II: Mental Health Counseling
EDU465. Assessment and Appraisal
EDU466. Problem Identification and Intervention in Counseling I
EDU470. Multicultural Perspectives in Counseling
EDU472. Principles and Practices of Mental Health Counseling
EDU473. Problem Identification and Intervention in Counseling II
EDU474. Addictions Counseling and Prevention
EDU479. Promoting Mental Health in Midlife and Old Age
EDU494. Adult Development and Aging
EDU510. Working with Clients Defenses: Psychodynamic and other Emotion-Focused Approaches
EDU514. Mind/Body Approaches to Healing Chronic Pain

Mind/Body Healing and Wellness

Advanced Certificate

Doug Guiffrida
Program Director

Overview

This program is a 13-credit-hour Advanced Certificate available to students and working professionals interested in gaining knowledge and skills related to mind/body healing and wellness.

https://www.warner.rochester.edu/degree/certificate/mind-body-healing-wellness

Graduate Faculty Information

Doug Guiffrida, PhD, *Syracuse University*
Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

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Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED483. Communication and Counseling Skills for Teachers, Administrators, and Other Helping Professionals

EDE419A. Topics in Foundations of Psychopharmacology and Biological Determinants of Mental Health

EDU503. Title Embodied Resourcing Through Somatic Practices

EDU510. Working with Clients Defenses: Psychodynamic and other Emotion-Focused Approaches

EDU514. Mind/Body Approaches to Healing Chronic Pain

PSI401. Live Group Supervision

PSI426. Integrated Mind-Body Practice

PSI492. Medical Family Therapy Intensive

Online Teaching and Learning

Master's Degree (MS) and Advanced Certificate

Eric Fredericksen
Program Director

Overview

Pre-COVID-19, online courses were already growing in the United States and around the world, yet during the pandemic they became a necessity for most institutions. It's unlikely we will ever go back to entirely in-person learning; in fact, we can expect the demand for online courses to dramatically increase now that most students have directly experienced this new modality and many institutions have invested in it. As we move toward a "new normal" in education, teachers, specialized staff, and instructional leaders are needed to ensure quality delivery of online and digitally rich instruction.

The Warner School is among a select few schools of education across the country to offer programs that will teach you the strategies and skills necessary to design and implement learning experiences that leverage online and digital learning in a variety of instructional settings. You can choose among multiple options to fit your context and career goals.

https://www.warner.rochester.edu/degree/masters/online-teaching

Graduate Faculty Information

Raffaella Borasi, PhD, *SUNY, Buffalo*
Professor
Frederica Warner Professor of Education

Eric Fredericksen, EdD, *University of Rochester*
Professor (clinical)
Associate Vice President for Online Learning

David Miller, EdD, *University of Rochester*
Associate Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.

- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
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Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

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GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED516. Designing and Evaluating Professional Development
EDE410. Learning in the Digital Age
EDE422. Motivation in Human Development
EDE465OT. MS Capstone Req: Online Teaching
EDE477. Teaching and Learning in the Content Areas
EDE484. Online Teaching and Learning
EDE484A. Digitally-Rich Teaching and Learning in K-12 Schools
EDE486. Designing Online Courses
EDE492. Integrating Technology in Teaching Content Areas
EDF488. Practicum in Online Teaching
EDU427A. Theory and Practice in Teaching & Learning Literacy (for non-Elementary Teaching Candidates)
EDU430. Theory and Practice in Teaching and Learning Mathematics in Elementary School
EDU431. Theory and Practice in Teaching and Learning English
EDU432. Theory and Practice in Teaching and Learning Social Studies
EDU434. Theory and Practice in Teaching and Learning Science
EDU435. Theory and Practice in Teaching and Learning Foreign Languages and ESOL (English to Speakers of Other Languages)
EDU436. Theory and Practice in Teaching and Learning Mathematics
EDU446. Entrepreneurial Skills for Educators
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU498. Literacy Learning as Social Practice
EDU522. Theory and Research in Learning
EDU523. Theory and Research in Teaching
EDU552. Counselor Education
EDU581. Clinical Teaching in Health Care Professions Education: Teaching and Instructional Methods

Program Evaluation

Master's Degree (MS) or Advanced Certificate

Nahoko Kawakyu-O'Connor
Program Director

Overview

As schools, colleges and universities, not-for-profit organizations, government entities, even private and public companies, seek to evaluate the effectiveness and efficiency of their projects, policies and programs, the need for credentialed program evaluation specialists will continue to increase.

The theoretical knowledge and practical skills acquired in our program evaluation program can be applied to a wide range of educational, social services, and business contexts. Graduates can serve as staff or consultant evaluators for assessment or accreditation bodies; support the effective, efficient management of not-for-profit institutions; evaluate government programs; and inform practice and policy decisions in any educational institution—K-12 or higher education—they may be working in.

https://www.warner.rochester.edu/degree/masters/program-evaluation

Graduate Faculty Information

Karen DeAngelis, PhD, *Stanford University*
Associate Professor

Nahoko Kawakyu O'Connor, PhD, *University of Rochester*
Associate Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

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- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
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- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is

generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.

- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificate

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED432. Professional Writing and Communications
ED437. Diversity and Equity in Higher Education
ED439. Policy Analysis in Education
ED482. Technology and Higher Education
ED483. Communication and Counseling Skills for Teachers, Administrators, and Other Helping Professionals
ED504. Quantitative Research Methods
ED505. Advanced Quantitative Research Methods

ED506. Concepts and Issues in Social Science Research
ED507. Qualitative Research Methods
ED516. Designing and Evaluating Professional Development
ED520. Program Evaluation
ED521. Advanced Program Evaluation
ED523. Mixed Research Methods
ED524. Survey Design (1 credit)
ED525. Interview and Focus Group Techniques (1 credit)
ED527. Advanced Qualitative Research Methods
ED528. Using Quantitative Data Analysis Software (1 credit)
ED529. Using Qualitative Data Analysis Software (1 credit)
ED545. Program Evaluation Practicum
EDE404. Basics in Applied Quantitative Analysis
EDE436. Diversity and Equity in Education
EDE479. Assessment, Accreditation and Accountability in Higher Education
EDU442. Race, Class, Gender, and Disability in American Education
EDU446. Entrepreneurial Skills for Educators
EDU447. Grant Writing and Other Funding Strategies for Educators

School Counseling

Master's Degree (MS) and Advanced Certificate

Bonnie Rubenstein
Program Chair/Director

Overview

Our Council for Accreditation of Counseling & Related Educational Programs-accredited school counseling programs prepare individuals to pursue leadership roles in schools as facilitators of healthy human development and advocates for change, positively impacting the success of individual students and school systems at large.

https://www.warner.rochester.edu/degree/masters/school-counseling

https://www.warner.rochester.edu/degree/coursework/advanced-certificate-mental-health-school-counseling

Graduate Faculty Information:

Andre Marquis, PhD, *North Texas University*
Associate Professor

Bonnie Rubenstein, EdD, *University of Rochester, Warner School of Education*
Professor of Education (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.

- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

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The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED405. Assessment in Instructional Contexts
ED406. Master's Research Methods
ED418. The Family and Social Dynamics
ED419. Life Course Studies
ED425. Minority Youth Development in Urban Contexts
ED429. Theories of Human Development
ED434. Student Affairs Administration: Minority Student Affairs
ED437. Diversity and Equity in Higher Education
ED446. Collaborative Teaching Partnerships in Inclusive Classrooms
ED447. Disability and Schools

ED453. Introduction to Applied Behavior Analysis
ED457. Autism Spectrum Disorders: Characteristics and Educational Issues
ED462. Managing School Resources
ED465. School Governance and the Rights of Students and Teachers
ED469. Leadership and Organizational Dynamics
ED481. School, Family, and Community Relations
EDE417. Crisis Counseling and Disaster Mental Health
EDE422. Motivation in Human Development
EDE469S. MS School Counseling Capstone Exam
EDE469S. MS School Counseling Capstone Exam
EDF450S. Practicum in School Counseling
EDF451. Supervised Internship in School Counseling I
EDF452. Supervised Internship in School Counseling II
EDU407. Curricular and Instructional Leadership
EDU416. Understanding and Managing Conflict in Professional Organizations
EDU439. Interpersonal Systems in Counseling and Human Development
EDU442. Race, Class, Gender, and Disability in American Education
EDU446. Entrepreneurial Skills for Educators
EDU447. Grant Writing and Other Funding Strategies for Educators
EDU450. Introduction to School Counseling
EDU453. Counseling and Facilitating in Small Groups
EDU454. Career Counseling and Development
EDU455. Policy and Practice in Developmental Differences
EDU457S. Counseling Theory and Practice I: School Counseling
EDU459. Contemporary Issues in School Counseling
EDU460S. Counseling Theory & Practice II: School Counseling
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU465. Assessment and Appraisal
EDU466. Problem Identification and Intervention in Counseling I
EDU468. Data-Driven School Improvement
EDU470. Multicultural Perspectives in Counseling
EDU471. Counselor as Systems Consultant
EDU472. Principles and Practices of Mental Health Counseling
EDU473. Problem Identification and Intervention in Counseling II
EDU474. Addictions Counseling and Prevention
EDU479. Promoting Mental Health in Midlife and Old Age
EDU485. College Access and (In)Equity
EDU494. Adult Development and Aging

Science Education

Master's Degree (MS) and Advanced Certificate

April Luehmann
Program Director
Kevin Meuwissen
Chair

Overview

Science teachers are especially important to meet today's need for scientifically literate citizens. Warner will prepare you to become an innovative science teacher, committed and able to help all students succeed.

Our teacher preparation programs offer the shortest path to NYS initial and professional teaching certification. Plus, there is a generous scholarship for all successful applicants.

All of the programs described below prepare candidates for NYS initial and professional teaching certification in Adolescence Education (Grades 7-12) as a Specialist in Biology, Chemistry, Physics, and/or Earth Science and are offered at the graduate level only. If you want to complete the master's program leading to initial teaching certification full-time in 15 months, you must start the program in the summer.

https://www.warner.rochester.edu/degree/masters/teaching/science

Graduate Faculty Information

April Luehmann, PhD, *University of Michigan–Ann Arbor*
Associate Professor

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced.

You can upload a file or cut and paste into the online application.

- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED405. Assessment in Instructional Contexts
ED406. Master's Research Methods
ED409. Language and Literacy in Education
ED415. Adolescent Development and Youth Culture (ages 10 to 20)
ED437. Diversity and Equity in Higher Education
ED446. Collaborative Teaching Partnerships in Inclusive Classrooms
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms

ED457. Autism Spectrum Disorders: Characteristics and Educational Issues
ED491. Independent Study in Education -Master's Level (variable credits)
ED516. Designing and Evaluating Professional Development
EDE422. Motivation in Human Development
EDE436. Diversity and Equity in Education
EDE453. Post-Secondary Transition for Youth with Significant Disabilities
EDE465S. MS Capstone Req: Science
EDE476. Teaching English Learners in Content Classrooms
EDE477. Teaching and Learning in the Content Areas
EDE484. Online Teaching and Learning
EDU414. American Educational and Linguistic Practices
EDU429. Theory and Practice in Teaching and Learning Science in Elementary School
EDU434. Theory and Practice in Teaching and Learning Science
EDU442. Race, Class, Gender, and Disability in American Education
EDU448. Implementing Innovation in Science Education
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU486. Integrating Science and Technology
EDU487. Integrating Science and Literacy
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU498. Literacy Learning as Social Practice

Social Studies Education

Master's Degree (MS) and Advanced Certificate

Kevin Meuwissen
Program Chair/Director

Overview

Our teacher preparation programs offer the shortest path to NYS initial and professional teaching certifications and a generous tuition scholarship.

All of the master's degree programs described below prepare candidates for NYS initial and professional teaching certification in Adolescence Education (Grades 7-12) as a Specialist in Social Studies and are offered at the graduate level only. If you want to complete the master's program leading to initial teaching certification full-time in 15 months, you must start the program in the summer.

https://www.warner.rochester.edu/degree/masters/teaching/social-studies

Graduate Faculty Information

Kevin Meuwissen, PhD, *University of Maryland*
Associate Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in

education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.

- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degree and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

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GRADUATE COURSE TITLES

ED405. Assessment in Instructional Contexts

ED406. Master's Research Methods

ED409. Language and Literacy in Education

ED415. Adolescent Development and Youth Culture (ages 10 to 20)

ED437. Diversity and Equity in Higher Education

ED446. Collaborative Teaching Partnerships in Inclusive Classrooms

ED447. Disability and Schools

ED451. Teaching and Learning in Inclusive Classrooms

ED457. Autism Spectrum Disorders: Characteristics and Educational Issues

ED491. Independent Study in Education -Master's Level (variable credits)

ED516. Designing and Evaluating Professional Development
EDE422. Motivation in Human Development
EDE436. Diversity and Equity in Education
EDE453. Post-Secondary Transition for Youth with Significant Disabilities
EDE465SS. MS Capstone Req: Social Studies
EDE476. Teaching English Learners in Content Classrooms
EDE477. Teaching and Learning in the Content Areas
EDE484. Online Teaching and Learning
EDU414. American Educational and Linguistic Practices
EDU428. Theory and Practice in Teaching and Learning Social Studies in Elementary School
EDU432. Theory and Practice in Teaching and Learning Social Studies
EDU433. Integrating Social Studies and Literacy
EDU442. Race, Class, Gender, and Disability in American Education
EDU462. Implementing Innovation in Social Studies Education
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU497. Teaching and Learning in Higher Education and Health Care Settings
EDU498. Literacy Learning as Social Practice
EDU499. Integrating Social Studies and Technology

School Building Leadership, School District Leadership, K-12 Educational Leadership

Doctoral Degree (EdD), Master's Degree (MS), and Advanced Certificate

Brian Brent
Department Co-Chair

Andrea Barret
Department Co-Chair

Patricia Vaughan-Brogan
Program Director

Overview

Preparing and advancing innovative leaders for K-12 schools and educational organizations, including New York State certification programs for school and building leaders.

https://www.warner.rochester.edu/degree/masters/school-building-district-leaders

https://www.warner.rochester.edu/degree/certificate/school-building-district-leaders

https://www.warner.rochester.edu/degree/doctorate/educational-leadership

Graduate Faculty Information

Brian Brent, PhD, *Cornell University*
Professor
Earl B. Taylor Professor of Education

Andrea Cutt, EdD, *University of Rochester*
Assistant Professor (clinical)

Patrick McCue, EdD, *University of Rochester*
Assistant Professor (clinical)

Manuel Rivera, EdD, *Harvard University*
Associate Professor (clinical)

Patricia Vaughan-Brogan, EdD, *University of Rochester*
Assistant Professor(clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Doctoral Programs

Applications are accepted to the PhD program only one time per year, in our December cycle. Applications are accepted to the EdD program on a rolling basis within any of our priority deadlines. Applications to the Doctoral programs are required to submit all of the materials described above. Doctoral applications require 3 letters of recommendation.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degree and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for

that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification, only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

Doctoral Degrees and Requirements

The Warner School offers two types of doctoral programs: Doctor of Philosophy (PhD) and Doctor of Education (EdD). The PhD program is designed specifically to prepare students for careers devoted to research and scholarship, particularly in a university environment. The EdD is designed to enable outstanding professionals to apply research to their field of practice.

Both degree programs require 90 credit hours (96 for students specializing in counseling). Students who have already undertaken relevant graduate-level coursework may be allowed to transfer it to their program (up to a limit of 30 credits for PhD students and 36 credits for EdD students) provided that: (1) the course(s) in question was taken within 10 years of the date of matriculation; (2) a grade of "B" or higher was earned; (3) they are approved by the student's advisor, program chair, and associate dean of graduate studies. If the courses were completed more than 10 years ago, students are required to submit a curriculum vitae and written narrative, describing how they have remained involved in their field of study, to help the advisor, chair, and associate dean to determine whether exceptions could be made. Transfer credit decisions are made at the time of approving each student's program of study. Courses taken at institutions other than the University of Rochester after matriculation into the doctoral program may not be used toward the doctoral degree.

In addition to coursework, doctoral students also need to successfully complete a set of milestone experiences. First, after having completed at least 18 credits in the program, all doctoral students must submit a portfolio for review. The portfolio review is evaluative, with feedback offered by faculty that is intended to nurture developing research expertise and intellectual and professional development. After passing the portfolio assessment and having completed most of the coursework for the degree, all doctoral students undertake an individualized comprehensive examination. Specific requirements for the comprehensive exam vary by program area. Finally, all doctoral programs culminate in the completion of a doctoral dissertation.

Advancement to candidacy for the PhD or EdD degree occurs upon successful defense of the dissertation proposal. The degree is awarded after completion of all degree requirements, and upon successful oral defense and acceptance of the doctoral dissertation.

All work for the doctoral degree, including the final oral examination on the dissertation, must be completed within seven years from the date of initial registration. Students with 30–36 credit hours accepted in the doctoral program must complete all work within six years from the date of matriculation in the doctoral program. Students who for good reason have been unable to complete a program within the above stated limits may, upon recommendation by the faculty advisor and the program chair, petition the associate dean of graduate studies for an extension of time. Such extension, if granted, will be of limited duration, must be re-approved at least biannually, and may require additional coursework.

Students must maintain continuous registration through the program. Full-time students must register for at least 9 credit hours during every fall and spring semester (excluding summer session) until the degree program is completed. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the program degree is completed.

Doctor of Education Degrees

The Warner School offers four EdD programs with additional concentrations in the following areas: K–12 Educational Administration; Higher Education; Teaching and Curriculum; Mental Health Counseling and Supervision; Counseling; and Human Development. There is no minimum residency requirement for this program, although students are strongly encouraged to make arrangements so that they can devote the necessary time to their dissertation.

The Warner School offers an accelerated option for EdD students who are experienced practitioners in their field of specialization and want to pursue the degree part time while holding a professional job in the same field, with a specially structured and supported yearlong dissertation cohort process. This option makes it possible for eligible students to earn a doctorate in education in as few as three years on a part-time basis for most EdD programs. Additional admission criteria and program requirements must be met by students choosing the accelerated option.

GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED462. Managing School Resources
ED465. School Governance and the Rights of Students and Teachers
ED469. Leadership and Organizational Dynamics
EDE460. Master's Culminating Requirement: Ed Administration K12
EDF498. Supervised Internship in Educational Administration (variable credits)
EDU407. Curricular and Instructional Leadership
EDU421. Human Resource Management
EDU468. Data-Driven School Improvement

Teaching Students with Disabilities All Grades

Master's Degree (MS) and Advanced Certificate

Martha Mock
Program Director
Kevin Meuwissen
Department Chair

Overview

Students with disabilities have unique needs and challenges and deserve teachers who are prepared to help them thrive and grow socially, emotionally, and academically. Warner will prepare you to become an innovative inclusion teacher, committed and able to help students with disabilities succeed. If you want to complete the master's program leading to initial teaching certification full-time in 15 months, you must start the program in the summer.

https://www.warner.rochester.edu/degree/masters/teaching/disabilities-inclusion

Graduate Faculty Information

Samantha Daley, EdD, *Harvard University*
Associate Professor

Kristen Love, PhD, *University of Rochester*
Assistant Professor (clinical)

Martha Mock, PhD, *University of Rochester*
Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degree and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive

credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED400. Topics in Teaching and Schooling, Part 1

ED400A. Topics in Teaching and Schooling, Part 2

ED405. Assessment in Instructional Contexts

ED406. Master's Research Methods

ED415. Adolescent Development and Youth Culture (ages 10 to 20)

ED446. Collaborative Teaching Partnerships in Inclusive Classrooms

ED447. Disability and Schools

ED451. Teaching and Learning in Inclusive Classrooms

ED452A. Inclusive Assessment and Instructional Methods A

ED452B. Inclusive Assessment and Instructional Methods B

ED452C. Inclusive Assessment and Instructional Methods C

ED457. Autism Spectrum Disorders: Characteristics and Educational Issues

EDE445. Teaching Students with Significant Disabilities

EDE448. Behavior and Communication Supports for Students with Significant Disabilities

EDE453. Post-Secondary Transition for Youth with Significant Disabilities

EDE465I. MS Capstone Req: Inclusion

EDE476. Teaching English Learners in Content Classrooms

EDE477. Teaching and Learning in the Content Areas

EDF441. Field Experiences with Children 0-3 in Inclusive Settings

EDF443. Student Teaching with Preschool Children in Inclusive Settings

EDF445. Field Experiences with Students with Significant Disabilities

EDF446. Teaching Students with Disabilities, Seminar A

EDF447. Teaching Students with Disabilities, Seminar B

EDU427. Theory and Practice in Teaching and Learning Literacy in School

EDU431. Theory and Practice in Teaching and Learning English

EDU432. Theory and Practice in Teaching and Learning Social Studies

EDU434. Theory and Practice in Teaching and Learning Science

EDU435. Theory and Practice in Teaching and Learning Foreign Languages and ESOL (English to Speakers of Other Languages)

EDU436. Theory and Practice in Teaching and Learning Mathematics

EDU442. Race, Class, Gender, and Disability in American Education

EDU443. Implementing Innovation in English Education

EDU444. Implementing Innovation in Mathematics Education

EDU448. Implementing Innovation in Science Education

EDU462. Implementing Innovation in Social Studies Education

EDU463. Implementing Innovation in Foreign Languages and ESOL Education

EDU475. Early Interventions for Children with Disabilities (ages 3 to 5)

EDU476. Early Intervention for Children with Disabilities (ages birth to 3)

EDU498. Literacy Learning as Social Practice

Teacher Leadership

Advanced Certificate

Kristen Love
Program Director

Overview

This program prepares competent and effective teacher leaders, who in turn can lead successful reform in the schools they work in, consistent with the Warner School's mission of promoting excellence in K-12 schools.

https://www.warner.rochester.edu/degree/certificate/teacher-leadership

Graduate Faculty Information

Kristen Love, EdD, *University of Rochester*
Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED469. Leadership and Organizational Dynamics
ED516. Designing and Evaluating Professional Development
EDE477. Teaching and Learning in the Content Areas
EDE536A. Coaching and Guiding K12 Teachers
EDE536B. Using Data to Lead Teams
EDE536C. Understanding and Leading Instructional Change in K12 Schools
EDE546. Teaching & Learning STEM
EDU407. Curricular and Instructional Leadership
EDU523. Theory and Research in Teaching

Teaching and Curriculum (non-certification)

Master's Degree (MS)

Kevin Meuwissen
Program Chair/Director

Overview

Warner offers several programs that will prepare you to teach what you love without the constraints of New York state teaching certification, giving you the freedom to follow your interests and passions. This program is ideal for those who want to teach outside of the United States or in private schools and other educational settings, including informal and after-school environments, and community-based organizations. International students will find these Warner programs especially attractive.

You can also choose some online courses to significantly reduce your trips to campus and take advantage of scholarships to make the program affordable.

All of the master's degree programs described below prepare students to teach in a variety of contexts that do not require specific credentials, such as charter and independent K-12 schools, schools outside the U.S., community colleges, community organizations, museums, after-school programs, or camps. None lead to New York state teaching certification.

https://www.warner.rochester.edu/degree/masters/teaching/non-certification

Graduate Faculty Information

Kevin Meuwissen, EdD, *University of Maryland*
Associate Professor (clinical)

Admissions

- The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:
- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).
All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's

degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

GRADUATE COURSE TITLES

ED406. Master's Research Methods

EDU442. Race, Class, Gender, and Disability in American Education

EDE465TG. MS Capstone Req: Teaching General

Teaching and Curriculum

Doctoral Degree (EdD and PhD)

Kevin Meuwissen
Program Chair

Overview

Whether you want to become a teacher educator or faculty in higher education institutions, pursue a leadership role in the teaching profession, or contribute new knowledge about teaching and learning, Warner's flexible doctoral programs in teaching will help you achieve your goals.

https://www.warner.rochester.edu/degree/doctorate/teaching

Graduate Faculty Information

Raffaella Borasi, PhD, *SUNY, Buffalo*
Professor
Frederica Warner Professor of Education

Jeffrey Choppin, PhD, *University of Wisconsin–Madison*
Professor

Samantha Daley, EdD, *Harvard University*
Associate Professor

Joanne Larson, PhD, *University of California, Los Angeles*
Professor
Michael W. Scandling Professor of Education

April Luehmann, PhD, *University of Michigan–Ann Arbor*
Associate Professor

Kevin Meuwissen, PhD, *University of Maryland*
Associate Professor (clinical)

Martha Mock, PhD, *Wisconsin*
Professor (clinical)

Hairong Shang-Butler,PhD, *University of Rochester*
Associate Professor (clinical)

Carol St. George, EdD, *University of Rochester*
Sheila Konar Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial

transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.

- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Doctoral Programs

Applications are accepted to the PhD program only one time per year, in our December cycle. Applications are accepted to the EdD program on a rolling basis within any of our priority deadlines. Applications to the Doctoral programs are required to submit all of the materials described above. Doctoral applications require 3 letters of recommendation.

Academics

Doctoral Degrees and Requirements

The Warner School offers two types of doctoral programs: Doctor of Philosophy (PhD) and Doctor of Education (EdD). The PhD program is designed specifically to prepare students for careers devoted to research and scholarship, particularly in a university environment. The EdD is designed to enable outstanding professionals to apply research to their field of practice.

Both degree programs require 90 credit hours (96 for students specializing in counseling). Students who have already undertaken relevant graduate-level coursework may be allowed to transfer it to their program (up to a limit of 30 credits for PhD students and 36 credits for EdD students) provided that: (1) the course(s) in question was taken within 10 years of the date of matriculation; (2) a grade of "B" or higher was earned; (3) they are approved by the student's advisor, program chair, and associate dean of graduate studies. If the courses were completed more than 10 years ago, students are required to submit a curriculum vitae and written narrative, describing how they have remained involved in their field of study, to help the advisor, chair, and associate dean to determine whether exceptions could be made. Transfer credit decisions are made at the time of approving each student's program of study. Courses taken at institutions other than the University of Rochester after matriculation into the doctoral program may not be used toward the doctoral degree.

In addition to coursework, doctoral students also need to successfully complete a set of milestone experiences. First, after having completed at least 18 credits in the program, all doctoral students must submit a portfolio for review. The portfolio review is evaluative, with feedback offered by faculty that is intended to nurture developing research expertise and intellectual and professional development. After passing the portfolio assessment and having completed most of the coursework for the degree, all doctoral students undertake an individualized comprehensive examination. Specific requirements for the comprehensive exam vary by program area. Finally, all doctoral programs culminate in the completion of a doctoral dissertation.

Advancement to candidacy for the PhD or EdD degree occurs upon successful defense of the dissertation proposal. The degree is awarded after completion of all degree requirements, and upon successful oral defense and acceptance of the doctoral dissertation.

All work for the doctoral degree, including the final oral examination on the dissertation, must be completed within seven years from the date of initial registration. Students with 30–36 credit hours accepted in the doctoral program must complete all work within six years from the date of matriculation in the doctoral program. Students who for good reason have been unable to complete a program within the above stated limits may, upon recommendation by the faculty advisor and the program chair, petition the associate dean of graduate studies for an extension of time. Such extension, if granted, will be of limited duration, must be re-approved at least biannually, and it may require additional coursework.

Students must maintain continuous registration through the program. Full-time students must register for at least 9 credit hours during every fall and spring semester (excluding summer session) until the degree program is completed. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the program degree is completed.

PhD in Education

The Warner School offers several areas of study within the PhD in Education. Students may concentrate in one of the following areas: Counseling and Counselor Education; Educational Policy

and Theory; Higher Education; Human Development; and Teaching, Curriculum, and Change. PhD dissertations should provide an original and scholarly contribution to research in the student's major field. A minimum of one year full- or part-time residency is required of all PhD students.

Doctor of Education Degrees

The Warner School offers four EdD programs with additional concentrations in the following areas: K–12 Educational Administration; Higher Education; Teaching and Curriculum; Mental Health Counseling and Supervision; Counseling; and Human Development. There is no minimum residency requirement for this program, although students are strongly encouraged to make arrangements so that they can devote the necessary time to their dissertation.

Students completing the EdD in Mental Health Counseling and Supervision are automatically eligible for the New York State mental health counseling license. Students graduating from this program would be eligible for a New York State limited permit and would need to complete 3,000 postgraduation supervised practice hours and pass the state examination to become a fully Licensed Mental Health Counselor (LMHC).

The Warner School offers an accelerated option for EdD students who are experienced practitioners in their field of specialization and want to pursue the degree part time while holding a professional job in the same field, with a specially structured and supported yearlong dissertation cohort process. This option makes it possible for eligible students to earn a doctorate in education in as few as three years on a part-time basis for most EdD programs. Additional admission criteria and program requirements must be met by students choosing the accelerated option.

GRADUATE COURSE TITLES

ED406. Master's Research Methods
ED504. Quantitative Research Methods
ED506. Concepts and Issues in Social Science Research
ED507. Qualitative Research Methods
ED513. Research Writing: The Literature Review
ED520. Program Evaluation
ED532. Action Research Methods (1 credit)
ED551A. Teaching & Curriculum Doctoral Cohort Seminar 1A
ED551B. Teaching & Curriculum Doctoral Cohort Seminar 1B
ED551C. Teaching & Curriculum Doctoral Cohort Seminar 1C
ED552A. Teaching & Curriculum Doctoral Cohort Seminar 2A
ED552B. Teaching & Curriculum Doctoral Cohort Seminar 2B
ED552C. Teaching & Curriculum Doctoral Cohort Seminar 2C
ED553. Teaching & Curriculum Dissertation Proposal Seminar
ED554. Action Research Dissertation Seminar I
ED555. Action Research Dissertation Seminar II
ED593. Ed.D. Research (Dissertation) (variable credits)
EDE558. Comprehensive Exam Research: Teaching & Curriculum EdD
EDE561. Portfolio Review: Teaching & Curriculum
EDU442. Race, Class, Gender, and Disability in American Education
EDU522. Theory and Research in Learning
EDU523. Theory and Research in Teaching
EDU526. Theory and Research in Curriculum and Change

Teaching English to Speakers of Other Languages

Master's Degree (MS) and Advanced Certificate

Meagan Driver
Program Director
Hairong Shang-Butler
Program Director
Kevin Meuwissen
Department Chair

Overview

Teachers who work with speakers of other languages in K-12 schools are increasingly important, given the growing number of students who need to learn English as a new language. Warner will prepare you to become an innovative TESOL teacher, committed and able to help all students succeed. If you want to complete the master's program leading to initial teaching certification full-time in 15 months, you must start the program in the summer.

https://www.warner.rochester.edu/degree/masters/teaching/tesol

Graduate Faculty Information

Meagan Driver, PhD, *Georgetown*
Assistant Professor of Education

Hairong Shang-Butler, PhD, *University of Rochester*
Associate Professor (clinical)

Admissions

The Warner School uses an online self-managed application process. Applicants are required to complete all portions of the online application and submit the following documents through an upload:

- Current resume or curriculum vitae (CV)
- Transcripts of all prior college level work. Unofficial transcripts are accepted for the admissions process; however, official transcripts of all previous post-secondary education are required if admitted to the program, within the first semester the student enrolls.
- Letters of recommendation from members of the academic community and/or workplace professionals who know your qualifications for graduate study are required. Preferably, at least one recommendation should be from a former professor. At least two letters are required for master's applicants and three for doctoral applicants. Letters of recommendation are managed on the online application.
- A statement of purpose describing your academic or professional background and your interest in pursuing graduate study at Warner is required. The statement of purpose is generally between two and four pages, double-spaced. You can upload a file or cut and paste into the online application.
- An academic writing sample. This must be written in English and may be a term paper from your earlier academic work, or a five- or six-page commentary on an issue in education that you have written for this purpose only. The paper should support an academic argument, reference citations, and use a research style sheet.
- A $70 application fee is required when submitting the application.

After the application is initially reviewed, candidates may be contacted to schedule an interview with a Warner faculty member. A holistic review of each individual application takes place by the faculty in the program. Warner reviews applications on a rolling basis for MS, CAS, and EdD candidates; applicants typically receive a decision on their application within 4 to 6 weeks from the priority application deadline.

Applying to Master's Programs

Applications are accepted to Warner master's programs on a rolling admissions basis. Master's applications require 2 letters of recommendations.

Applying to Advanced Certificates

Applications are accepted to Warner advanced certificate programs on a rolling admissions basis. Advanced certificate applications require 2 letters of recommendation.

Academics

Master's Degrees and Requirements

The Warner School is committed to excellence in pre-service and in-service preparation of education professionals at the master's level. It maintains programs that prepare students to undertake a wide variety of professional roles in schools and other educational settings. Several of these programs also enable students to satisfy all the academic requirements needed to obtain initial and/or professional certification from New York State or become eligible for licensure. All these programs combine strong emphasis on professional excellence with the University's commitment to sound scholarship and are nationally accredited by AAQEP (Association for Advancing Quality in Educator Preparation) and/or CACREP (Council for Accreditation of Counseling and Related Educational Programs).

All master's degrees require completion of at least 30 credit hours of coursework, although many MS degree programs require additional credit hours (as indicated for each program listed in this section).

Transfer credit pertains to graduate coursework from another institution or another school or college within the University of Rochester that is completed before the student matriculates into a degree program at the Warner School. Retroactive

credit pertains to coursework completed at the Warner School prior to matriculation into a degree program. No more than 10 credit hours may be accepted as transfer credit into a master's degree. It is possible that a combination of transfer and retroactive credit may exceed 10 credit hours. Transfer credit and retroactive credit are permitted only when they meet the following criteria: (1) must have been taken within five years of the date of matriculation, (2) must have received a grade of B or higher, and (3) must meet the approval of the faculty advisor, program chair, and the associate dean of graduate studies. Courses taken at institutions other than the University of Rochester after matriculation in the master's degree program may not be used toward the master's degree.

The total time limit for completing a master's degree is five years. Requests for extension of this deadline must be submitted in writing to the associate dean of graduate studies. Such extensions, if granted, will be of limited duration and may require additional coursework.

Students may pursue the MS degree on a full-time or part-time basis. In cases that require a field placement (student teaching, practicum, or internship), however, it may be necessary to spend one or two semesters in full-time residence. Policies regarding conditions for fulfillment of field placement responsibilities vary from program to program. All master's programs require a culminating assessment, although the nature of this assessment varies across programs (master's essay, thesis, portfolio, or comprehensive exam). Students must maintain continuous registration throughout the program. Continuous registration for part-time students means registration for a total of nine credit hours every academic year sequence of summer-fall-spring semesters until the degree program is completed. If a student does not register for coursework during any fall or spring semester, that student must register for continuation of enrollment for that fall or spring semester. Students have to either register for courses or for continuation of enrollment every fall and spring semester until the degree program is completed. Courses listed below may not include all electives eligible for this program.

Advanced Certificates and Requirements

Students who already hold a master's degree but are seeking additional NYS certifications can also pursue their goals by enrolling in one of the Warner School's non-degree programs leading to a specific certification (registered with the NYS Education Department). Some advanced certificates that do not lead to NYS certification only require a bachelor's degree. The number of credit hours necessary to complete each of these certification programs depends on each student's previous background.

GRADUATE COURSE TITLES

ED400. Topics in Teaching and Schooling, Part 1
ED400A. Topics in Teaching and Schooling, Part 2
ED406. Master's Research Methods
ED409. Language and Literacy in Education
ED415. Adolescent Development and Youth Culture (ages 10 to 20)
ED429. Theories of Human Development
ED432. Professional Writing and Communications
ED437. Diversity and Equity in Higher Education
ED440. Urban Teaching & Leadership Seminar 1A
ED441. Urban Teaching and Leadership Seminar 1B
ED447. Disability and Schools
ED451. Teaching and Learning in Inclusive Classrooms
ED480. Second Language Acquisition and Bilingualism
EDE436. Diversity and Equity in Education
EDE446. Introduction to Urban Education
EDE465. Master's Essay: TESOL
EDE465T. MS Capstone Req: TESOL
EDE477. Teaching and Learning in the Content Areas
EDE484A. Digitally-Rich Teaching and Learning in K-12 Schools
EDF426. Field Experiences in ESOL
EDF427. Field Experiences in ESOL in Inclusive School Settings
EDF428. Student Teaching in ESOL in Elementary Schools
EDF429. Student Teaching in ESOL in Inclusive School Settings A
EDF430. Student Teaching in ESOL in Secondary Schools
EDF432. Student Teaching in ESOL
EDF433. Student Teaching in ESOL in Inclusive School Settings B
EDU414. American Educational and Linguistic Practices
EDU435. Theory and Practice in Teaching and Learning Foreign Languages and ESOL (English to Speakers of Other Languages)
EDU442. Race, Class, Gender, and Disability in American Education
EDU463. Implementing Innovation in Foreign Languages and ESOL Education
EDU464. Child Development and Learning in Context (ages 5 to 12)
EDU467. Language, Literacy, and Cognitive Development
EDU498. Literacy Learning as Social Practice

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