Arts, Sciences and Engineering—Planning for the Future

Introduction

Over the past two and a half years, Arts, Sciences and Engineering has been developing a plan to shape our future during the coming decade. The provisional plan presented here arose from the insightful work of faculty, students and staff within the College, and in collaboration with other units within the University.

Our obligations are to discover, organize and communicate knowledge in the humanities, social sciences, sciences and engineering, through research, scholarship, and creative works; to educate students through the transfer of that knowledge; to prepare students for careers—to qualify them and equip them to be future leaders of our society; and to provide opportunities for their personal growth as individuals.

We intend to secure our place as one of the world's finest schools of arts, sciences and engineering, characterized by:

- Signature initiatives and programs that attract and retain outstanding faculty, and foster the most distinguished research and scholarship.
- Distinctive instructional and co-curricular programs and opportunities that attract the most promising graduate and undergraduate students, and prepare them most effectively for future success in the world.
- State-of-the-art facilities for key programs.

In laying a path to this state, we assume a broad obligation to:

- Foster broader, affordable, access for prospective students.
- Encourage greater diversity and inclusiveness among faculty and students.
- Engage with and benefit the community beyond the university.
- Have a sustainable impact on the environment and the world at large.

Our plan does not constitute a blueprint, but rather a general expression of how we should approach managing our future. Much of what will be important is unforeseeable, and much of what has made great academic programs strong in the past has resulted from seizing unexpected opportunities.

Our plan positions us well to seize such opportunities. It presents a rich and compelling agenda for systematic strengthening of Arts, Sciences and Engineering. The growth we anticipate is powered by a set of initiatives constructed to ensure balanced progress on multiple fronts: offering a broad and powerfully attractive portfolio of undergraduate programs, strengthening our core departments, protecting our competitiveness in key scientific domains, defining signature domains in which we can not only excel but become preeminent.
**Plan Context**

**Goals**

We produce knowledge and we produce powerful, disciplined thinkers. Knowledge originates in the research and scholarship of our faculty and is offered to the world through publications and creative works. Our distinction depends substantially on the impact of this work. Powerful, disciplined thinkers are the fruits of our undergraduate and graduate programs; our distinction here depends on our capacity to attract bright entering undergraduates and transform them into rigorous, creative intellects, and on our capacity to attract talented entering graduate students and transform them into skilled professionals and powerful researchers.

Strength in each of these groups is essential, and inextricably coupled to strength in the other two: we attract and retain outstanding faculty only by offering the opportunity to teach talented graduate students and bright undergraduates; we can attract strong graduate students only by having a distinguished faculty; we can attract the most promising undergraduates only by offering them opportunities for engagement with distinguished faculty.

Our future success therefore depends overwhelmingly on, and is measured by, the strength and distinction of the people that comprise the College. Our plan must ensure this.

**Plan Development**

When assessing initiatives during plan development, the working groups asked:

- Is it aimed at an issue that will be of major scholarly, social, or scientific significance in the first quarter of the 21st century?
- Can it lead to a program of national/international distinction within a reasonable time?
- Will it build on existing strengths, or complement them in ways that improve our academic coherence?
- Will it open distinctive curricular opportunities, particularly for undergraduates?
- Would it be hard for other universities to develop with comparable distinction?
- Will it attract external financial support from foundations, government and/or industry?

Our work started with an assessment of our present state—our strengths and weaknesses, the opportunities before us, and the threats we face. Framed by these circumstances, our plan offers a rich and compelling agenda for systematic strengthening of Arts, Sciences and Engineering.

**Our greatest strengths are:**

- Strong and distinctive research profile, especially in quantitative social sciences, sciences, engineering
- Distinctive and attractive Rochester Curriculum
- Integration of academic and co-curricular life
- Integration of arts and sciences with engineering in a single school

**Our greatest weaknesses are:**

- Small faculty size and constrained resources limit the range and depth of research and undergraduate programs; it limits our visibility and reputation
- Paucity of professionally-flavored undergraduate programs
- Lack of undergraduate programs focused on the world beyond the United States
The greatest opportunities are:
• New academic partnerships with the Eastman School of Music, and with George Eastman House; strengthened partnership with the School of Medicine and Dentistry
• Development of professional master’s and certificate programs
• Increased enrollment of undergraduates from abroad

The greatest threat is:
• The adverse demographic trend in New York State, and the northeast generally

The plan results from an enormous amount of work by the faculty and staff. Beginning in late 2005, departments and programs began work on individual plans to strengthen themselves over the next ten years. These plans were reviewed by divisional working groups (humanities, social sciences, natural sciences, and engineering) charged with identifying larger multidisciplinary opportunities. From all of this work we identified a set of candidate initiatives of potentially great potency, and during 2006 and early 2007 faculty working groups (several involving faculty from other schools in the University) examined these in detail and recommended how they should best be pursued. Altogether more than a quarter of our faculty were involved in this stage of planning. Our plan was subsequently refined through separate consultations with faculty, with students and with senior staff.

Plan Summary
Our future as one of the nation's leading private universities depends on the caliber of the faculty in Arts, Sciences and Engineering, and the breadth and impact of their research programs; it depends on the caliber of the PhD students we attract, and our success in training them for prominent research or professional positions; it depends on the caliber of the undergraduates we attract, and our capacity to transform them into powerful, flexible intellects equipped to make an impact on the world.

To attract and retain the very best faculty and students we must strengthen and enlarge our research profile, fortify and energize our PhD programs, and broaden and strengthen our undergraduate programs. Since these goals are inextricably linked, our strategic plan charts a path to achieving all of them.

The initiatives described represent our pick of the best investments for achieving our goals during the next ten years. To provide for the new programs, and to strengthen our academic departments generally, we must enlarge our faculty. We foresee growth of about 25%, taking our faculty from about 320 to about 400. To maintain an appropriate balance between numbers of faculty and numbers of students, the number of undergraduate students would grow from about 4000 to about 5000, and the number of PhD students from about 900 to 1125. This growth will require commensurate investments in academic and student life support services and in new space for academic and co-curricular life.

The initiatives that comprise our plan will drive us in a balanced way towards strengthening our research, our graduate programs, and our undergraduate programs. The initiatives are described briefly in the next section.

The World Beyond the United States
Regional and global issues present some of the most significant problems with which we must be engaged, both in research and in the curriculum. To become more involved in the world beyond the United States, we will:

• Develop a new undergraduate major in International Relations
• Create new area studies programs
• Institute a new program in environment change
• Greatly increase participation in study abroad

Signature Programs that Connect Humanities to Science and Engineering
We have the opportunity to capitalize on a unique constellation of strengths—in the College, at the Eastman School, and George Eastman House—to develop compelling “signature programs,” in Music and Sound, and in Images and Light, that could not be matched by other universities. A third program, in Archeology, Architecture and Engineering, will extend this distinctive signature.

Science and Engineering Partnerships
Four science initiatives capitalize on special strengths or on opportunities for partnership with other units in the University:

• Computational and physical biology
• Discovering the functions of genes
• Nanoscience for medicine
• Alternative energy

Pre-Professional Education
We will start two distinctive undergraduate programs that build on significant institutional research strengths, are grounded in our liberal arts curriculum, and serve the many undergraduates eager for programs with a pre-professional flavor. One, covering business and to be offered in partnership with the Simon School, will have at its core a new major in Economics and Business Strategy. The other, covering the broad domain of public health and to be offered in partnership with the School of Medicine and Dentistry, will offer five new majors.

Professional Education
In many fields, a specialized Master’s degree or a graduate certificate is becoming the entry-level professional qualification. These programs can provide important migration paths for undergraduates, and often can be offered at marginal cost. We expect to offer a greatly expanded array of programs of this kind.

Undergraduate Academic Life
We will be taking vigorous steps to strengthen undergraduate academic life through an expanded focus on undergraduate research, through strengthened academic support services, and through efforts to increase the diversity of the undergraduate body.

Life Beyond the Curriculum
Campus life beyond the curriculum is tremendously important. We are justifiably proud of our programs, but some of our facilities are substantially sub-par. We need to make major investments in facilities for the performing arts and for athletics.
The Plan in Detail

Building on the Success of the Renaissance Plan

The Renaissance Plan, instituted in 1995, created the College from the union of the College of Arts and Science with the School of Engineering and Applied Science. This was a bold initiative to strengthen Arts and Sciences and Engineering. The number of undergraduates was reduced to permit greater selectivity in enrollment and to improve the quality of the undergraduate experience. The number of faculty was reduced somewhat, as was the size and scope of some graduate programs.

Over the next several years the College assumed responsibility for all undergraduate affairs on the River Campus, including Career Services (1998), Athletics, Residential Life and the operations of the Dean of Students (2001), and Admissions and Financial Aid (2002). The coherence and focus brought by the Renaissance Plan, coupled with our concurrently developed distinctive Rochester Curriculum, have transformed life on campus. This transformation has positioned us for growth.

The plan described here takes us from the stability brought about by the Renaissance Plan into a genuine post-renaissance period in which, through the execution of a constellation of potent initiatives, we will greatly strengthen our faculty and our graduate and undergraduate programs.

Diversity

We expect several of our initiatives to help us become more diverse, but we must continue to take steps aimed expressly at the issue. Some of these stem from the work of our Faculty Diversity Committee that has recommended:

- Understanding best practices for recruiting and retaining faculty and for making these widely known
- Developing guidelines to make faculty searches maximally inclusive and attractive
- Developing support mechanisms to help retain faculty

Although we have made recent progress in expanding the diversity of our student body, and have some distinguished programs that help foster it (for example the Kearns Center for Leadership and Diversity in Science and Engineering and the Ronald E. McNair Post-Baccalaureate Achievement Program), more remains to be done.

A working group has been established to examine what additional steps we should take to strengthen our enrollment and retention of students from groups who have not traditionally had full access to private higher education.

The World Beyond the United States

The future of our society is increasingly bound up with, and determined by, what happens elsewhere in the world. This rapidly growing global interdependence presents many new and fundamentally important problems, engages students deeply, has great enrollment appeal, and involves every kind of human activity, from protection of the environment and climate to artistic and cultural phenomena.

- We must make major investments in programs with an international focus:
- Programs that study the political, economic and social relations among countries.
- Programs that focus on regions of the world, with an emphasis on the societies, arts, literatures, religions, histories and languages.
- Programs concerned with global issues, such as climate change, environment, international trade, religious movements and ethics.
These initiatives have the potential to add substantially to the diversity of the faculty and of the student body.

**International Relations**
This is an area in which Political Science is eager to enlarge its academic footprint, and one of huge appeal to undergraduates. The department expects to offer a new major in International Relations in the fall of 2008. The major will include a required semester of Study Abroad and elective tracks in areas of international relations and comparative politics. Students will be required to take two college-level courses (at any level) taught in another language.

**Area Studies**
In developing a richer signature in programs that focus on discrete areas of the world, we will concentrate on areas in which we can create or strengthen programs of large impact. We have identified three candidates on which to focus initially:

- East Asia
- Eastern Mediterranean, including the Middle East
- Africa and the African Diaspora

**East Asia (China, Korea, Japan)**
This is an area in which we must have a strong scholarly presence. We will strengthen the faculty and provide a major in East Asian Studies by orchestrating a cluster of faculty appointments in several departments to cover the history, languages, literatures, and cultures of the region.

**Mediterranean Studies**
Our Area Studies working group proposed integrating new faculty appointments with existing expertise to establish a program that focuses on the eastern Mediterranean (especially Turkey, Lebanon, Israel) and North Africa (from Morocco to Egypt). This will strengthen area programs in European Studies and African Studies, while providing a credible and distinctive emphasis that includes the Middle East.

**Africa and the African Diaspora**
The study of the history and cultures of Africa, and the way in which other regions of the world have been shaped by it, are the research focus of individual faculty in History, Political Science, Modern Languages and Cultures, and Religion and Classics. We have offered a major in African and African-American Studies for several years. The Frederick Douglass Institute offers a coherent structure within which to strengthen our scholarly and curricular impact by making additional hires.

**Global Studies**
Several of the most important, challenging and engaging problems of the 21st century can only be understood in a global context.
- Climate change and the global environment
- Sustainability
- Migration
- International trade
- Epidemics and related aspects of public health
- Religious movements

We have the opportunity to make a distinguished start in expanding our coverage of these major domains through the development of a program in environment change and policy, anchored in the study of global climate change.
Literary Translation
We are well advanced towards introducing an undergraduate certificate, a graduate certificate, and a Master’s degree that will offer training in the art and skills of literary translation. We have launched a literary imprint, Open Letter, which focuses on literature in translation. Very few academic institutions offer translation programs, and our ability to combine coursework on translation theory and literature with practical experience in international publishing is distinctive.

Study Abroad
Twenty-one percent of our undergraduates spend some part of an academic year in a study abroad program. We want to greatly expand this number. Our working group on Study Abroad concluded that there are many things we can do to increase the participation of our students generally, and of scientists and engineers particularly.

Signature Programs Connecting Humanities to Sciences and Engineering
It is generally good for our academic profile to align well with other major private universities, but we can benefit greatly from having a small number of “signature programs” for which we are visibly distinctive. We are in an unusually good position to develop a signature in bridging the humanities to the sciences and engineering:

Music and Sound
One initiative connects the humanities to science and engineering through music. The combined strengths of the Eastman School and the College Music Department give us exceptional coverage of music theory and performance, our historical strengths in sensory and cognitive science (with an emphasis on language) provide a powerful foundation for work on music cognition, and our strengths in signal processing and artificial intelligence provide a foundation for work on encoding and representation.

- Under the umbrella of a Center for Music and Sound we can push the research frontiers in diverse areas:
- Physical science/engineering problems such as machines that listen (i.e., can transcribe music)
- Music telepresence
- Music as digital object
- Cognitive science: perfect pitch, tonality induction, relationships between music and language

We can have correspondingly distinctive programs in the curriculum, by establishing a new BS in Musical Science, along with a minor and clusters, and a new MS track in Electrical and Computer Engineering.

Our planning for this initiative has been undertaken in collaboration with the Eastman School. The potential research impact is exceptional and the initiative will attract extraordinary students.

Images and Light
The second initiative connects the visual arts to science and engineering. It has been planned jointly with George Eastman House. As the initiative is further shaped we hope to collaborate with the Memorial Art Gallery and the Visual Studies Workshop. The potential research impact is large, as is anticipated enrollment. Few other institutions could compete with us.

- Our Visual and Cultural Studies program is a national model, we have strong and broad engagement in film, and George Eastman House is an international resource for film and photography.
- We have a small, but unusually potent, presence in the emerging domain of digital humanities, focused on images.
• We have exceptional strengths in the science of seeing, extending from sensory physiology to visual perception, and in formal aspects of image representation and analysis.

We can draw these strengths together and augment them, through a Center for Humanities and Image Technology, to make a mark on several major research domains:
• Visual production
• Image management for digital humanities
• Standards for encoding images
• Image reconstruction
• Classification and identification of images by content
• Managing provenance

This initiative carries many curricular opportunities that can substantially raise the profile of the humanities on campus:
• Strengthen the studio arts
• Strengthen the BA in Film and Media Studies through the introduction of new courses and internships
• Mount a collection of linked MA programs in Photographic Studies, in Film and Media Studies, and in Conservation Studies
• Establish a Master of Fine Arts (MFA)
• Mount a PhD in Film and Media Studies

Archeology, Architecture and Engineering
A smaller initiative would create an unusual undergraduate program that integrates engineering, art history, religion and classics, and history. The program, which will have both an historical and a global perspective, is focused on engineering as a discipline in the service of infrastructural projects, such as canals, roads, bridges and aqueducts, the production of artifacts, such as weapons and musical instruments, and the structural needs of architecture. We can offer a major, a minor, and clusters. The program will also have a heavy emphasis on research and will be integrated with study abroad (through, for example, our program in Arezzo).

Science and Engineering Partnerships
Living organisms are highly organized systems of immense complexity, they are made of marvelously engineered materials, they reproduce and repair themselves, they are incredibly energy efficient, and they store and manipulate information in ways no modern computer can. They present fundamental challenges to scientists and engineers in all disciplines, so it is natural that they be a focus for several initiatives.

Each of the following initiatives capitalizes on a special strength and/or opportunity. In three of them, unusual strengths in the College, or a special partnership with the School of Medicine and Dentistry, will enable us to make a mark in emerging domains. A fourth science and engineering initiative on alternative energy connects us with the Laboratory for Laser Energetics.

Computational and Physical Biology
The biological, physical and formal sciences are coming together in diverse domains, ranging from areas such as computational neuroscience to physical biology, to bioinformatics—opening up new areas of study in the formal and physical sciences, and bringing powerful new approaches to the study of biological problems.

This initiative will allow us to mount new BS degrees in Bioinformatics and Computational Biology and to offer several new PhD tracks in bioinformatics, computational biology, biological physics, and neural computation.
Discovering the Functions of Genes
Rapid developments have brought the field of genome science surprisingly quickly to the point of knowing the structure of the genome. The problem is now to understand the functions of genes. One of the most promising approaches to identifying the function of genes is through comparative and functional genomics, which compares the same genes in different species that share particular structures or functions.

We have an internationally recognized group of faculty in evolutionary biology (a field crucial to the next stage of analysis) around whom we can build a distinguished program.

The curricular opportunities are substantial:
- Introduction of a new BS degree in Genome Biology
- Opportunities for Master's and/or certificate programs in Genomics
- Expansion of the Genetics, Genomics and Development graduate cluster

We expect our investments in faculty to be complemented by a corresponding investment by the Medical School. The initiative will establish our research presence in an absolutely essential domain of 21st century biology.

Nanoscience for Medicine
Nanoscience (the study of phenomena and materials at atomic and molecular scales, where their properties differ from those at larger scales) is a multidisciplinary domain that has been developing rapidly for 20 years. We have a special opportunity (in partnership with the School of Medicine and Dentistry) to make a mark through an initiative focused on applications in medicine. Nanomedicine is a relatively new, but growing, field in which we are well placed to make an impact.

The initiative offers powerful opportunities for engaging undergraduates in research, and for a minor and clusters. There might also be potential for a graduate certificate program.

Our investment in faculty would be complemented by new faculty appointments in the Medical School. The initiative offers a niche opportunity for distinction in research.

Alternative Energy
Energy for sustainable development is a problem of huge importance—one that involves a broad range of science disciplines and also those social sciences concerned with economics and public policy. We have an opportunity to capitalize on the strength of the Laboratory for Laser Energetics to develop some prominence in alternative fuels and technologies.

Solar Energy
Our opportunity in solar energy lies in advancing development of organic photovoltaic devices for direct conversion of sunlight into electricity. These devices are inefficient and expensive, and fundamental research and development are necessary to make them economically viable. We have core faculty strengths around which we can build to make advances on these problems.
Hydrogen Fuel
Fuel cells produce electricity directly, without combustion, from the reaction of hydrogen with oxygen, creating only water as waste. At present, fuel cells are expensive, and lack the performance and durability needed to be economically viable. We have a group of strong faculty, spanning several departments, working on these problems, and we are near (and have ties to) two major industrial research labs working on fuel cells.

Opportunities for undergraduate programs in energy are greatest where they bring science into contact with policy, through potential new BS degrees in energy sciences, in energy and the environment, and corresponding minors and clusters.

Pre-Professional Education
Many of our students come to us intending to enter the professions, and follow a standard preparatory curriculum grounded in the liberal arts. We do not currently offer any programs—for example, business—that have an explicit pre-professional flavor, with courses that focus more directly on professional training. Such programs appeal greatly to prospective undergraduates. We intend to offer majors that extend our pre-professional reach into business and public health. In both domains we will offer something distinctive that is well grounded in the rigorous traditions of our liberal arts curriculum.

Business
Business is the major in which the largest fraction of high school students indicate interest, and business-related programs provide our greatest opportunity for enlarging the pool of applicants and underpinning expansion of the undergraduate body.

The programs described below follow the recommendations of a joint committee of faculty from the College and the Simon School to attract and provide for very strong students who will be comfortable within the culture of the College. The principal initiatives are a new major in Economics and Business Strategies and a business minor. They are grounded in the liberal arts tradition of the College—a distinguishing feature in common with our new major in Financial Economics.

The new Economics and Business Strategy major provides two paths:
1. Organizations and Markets - connects to a management and advanced industrial organization curriculum.
2. Methods for Market Analysis - connects to a marketing and advanced econometric curriculum.

The new business minor will provide an explicit business qualification that is a professionally oriented addition to a liberal arts major. It will replace the current Management Certificate.

Public Health
Health-related programs provide an attractive opportunity—offering paths to rigorous degrees outside the traditional pre-medical sequence and providing health-related alternatives for students who decide to leave the pre-medical curriculum.

The physical proximity of the School of Medicine and Dentistry (SMD), the long history of collaboration on the undergraduate curriculum, and the distinction of the Department of Community and Preventive Medicine are exceptional resources that we can deploy to offer a portfolio of strong majors that few other universities could match.

Following the recommendations of a working group comprised of faculty from the College and SMD, proposals are being developed for five new majors under the general rubric of public health:
• Science - two new majors, in Environmental Health and in Epidemiology and Statistics
• Social Science - two new majors, in Health and Society and in Health Policy. The Health and Society major would replace the one currently offered.
• Humanities - a new major in Bioethics.

Professional Education

Master's and Graduate Certificate Programs
As part of the natural progression towards a PhD, most of our graduate programs offer a Master's degree. An entirely different kind of Master's degree—one offered as intensive professional training, and often heavily based on courses—is increasingly being sought by students as an entry-level professional qualification. Such degrees, especially as components of 3/2 programs, are attractive to undergraduates. In some fields, graduate certificate programs, often involving internships, provide preparation for entry to more advanced graduate programs.

We currently offer no graduate certificate programs, but we expect to introduce one in literary translation, and our collaboration with George Eastman House will allow us to introduce one in media preservation and conservation. We have begun an analysis of opportunities to expand the range of programs we offer. Some opportunities arise through the initiatives discussed (for example, in Music Signal Processing, in Media Preservation and Conservation, in Bioinformatics, in Literary Translation); others are likely to be contained within the disciplines.

Post-Baccalaureate Pre-Medical Education
We have developed plans to introduce a post-baccalaureate program during this academic year. Many bright students decide late in their undergraduate careers that they want to become doctors, but they lack the necessary pre-medical courses. Universities are increasingly providing tailored packages to meet the needs of such students, generally through one-year programs of courses assembled to ensure that students become fully qualified for entry to medical school. These programs attract exceptionally able students. By deploying our existing strengths in pre-medical education we can very easily mount an outstanding program of this kind.

Undergraduate Academic Life

Research
Many of our undergraduate students already participate in substantial research outside the classroom. We intend to make it possible for every undergraduate to have a full and rewarding encounter with research, starting in the freshman year.

• Developing the UR Options program - This will offer select incoming freshmen portable research funds they can use for travel, supplies, summer support or other research costs. Students will be able to use these funds for research expenses at any time during their undergraduate years.
• Developing Research web pages to provide students with clear guides to the research opportunities in departments.
• Encouraging all departments to strengthen the research opportunities they offer students.
• Increasing the visibility of the annual Undergraduate Research Expo held on campus each spring.
• Augmenting the program that provides funds for students to travel to undergraduate research conferences.

Student Services & Support
The high quality of our student support services has contributed hugely to the improvements in student academic progress and satisfaction we have enjoyed over the last ten years.
To continue our progress, we will take additional steps to strengthen student services and support. Working groups have been established to recommend improvements in three areas:

- **Academic Advising** – Advising will be strengthened by securing a stronger partnership between faculty advisors and professional advisors.
- **Academic Policies** – Several of our general academic policies are at odds with those at peer institutions, and are being examined.
- **Diversity** – Development of additional support programs to recruit strong minority students.

### Life Beyond the Curriculum

Campus life beyond the curriculum is tremendously important. We are justifiably proud of our programs, but some of our facilities are substantially sub-par. We need to make major investments in facilities for the performing arts and for athletics.

### Arts on Campus

Our overall plans must ensure that we have adequate facilities for the myriad ways in which faculty and students are engaged in the creative and performing arts. In particular, our proposed signature initiatives depend on bringing together faculty from multiple disciplines.

In initial studies on facilities for some of the performing arts, outside consultants developed a provisional recommendation for a “Village for the Arts” that upgrades Strong and Todd Union and provides for approximately 57,000 net square feet of new rehearsal, performance, teaching and support space in a connecting building.

The complex, if fully developed, would provide the following:

- **Music**: 150 seat recital hall; five new music rehearsal spaces; 40 plus practice rooms (consolidating scattered practice space); classrooms and seminar space; administrative space.
- **Theater** (all within renovated Todd): new 150 seat flexible theater; renovated rehearsal space; classrooms appropriate for teaching directing, acting, production; support shops and studios; dressing rooms; production offices; administrative space.
- **Dance**: large performance/rehearsal studio; two dance studios; dressing rooms; administrative space.
- **Electronic Music**: music cognition lab; recording studio; tele-presence studios; development laboratory/workspace.
- **Strong Auditorium Improvements**: new fly tower with expanded wing space; enhanced acoustics; new orchestra shell and pit; air-conditioning; improved audience amenities.

### Athletics

Our athletics programs and facilities have a major positive impact on our capacity to recruit and retain undergraduates. Since the renovation of the Goergen Center, indoor facility use has more than doubled; we are better able to recruit the scholar-athletes who bring us distinction in athletic competition and in their academic work. To continue and build on the success of the Goergen Center, we have commissioned two studies for additional projects.

**Phase I - Fauver Stadium and the adjoining fields:**

- Make a significant investment in the stadium to provide adequate locker rooms, training rooms and equipment rooms on a par with facilities at peer institutions.
- Improve outdoor fields to provide more flexible, central field space for varsity and recreational use.
• Replace the current natural grass baseball field surface with an artificial turf, like the new turf on Fauver Stadium, and add lights.
• Integrate the baseball field with Fauver Stadium by enclosing both in an attractive boundary wall—redefining this entrance to campus and creating a coherent outdoor complex.

Phase II – Indoor Space:
• Extend our indoor space and create major new programming opportunities through the provision of an attractive and flexible assembly space that absorbs and extends the functions of the Palestra and current Field House.
• The athletics complex would be extended to Wilson Boulevard by removing the rear of Zornow and constructing a new signature building that would open up campus to the Genesee River.
• This space (83,000 net square feet total) would accommodate a field house with a 200M indoor track and multi-use court space, additional cardio fitness areas, team rooms, meeting rooms, and other program space netting 62,000 net square feet of new space.
• It would accommodate up to 6000 people for large University events (e.g., concerts, major speakers, graduation and other events) with flexible configuration options.
• The existing Field House space would be converted to multi-use use indoor court.

Managing Growth
Our plan entails a significant expansion of the College. Over a ten year period we expect our faculty to grow from about 320 to about 400, the number of PhD students to increase from about 900 to over 1,100 and the number of undergraduates to grow from about 4,000 to about 5,000. We are also planning to introduce new master's and post-baccalaureate programs that will bring perhaps 300 additional students to campus. There will be a commensurate growth in the size of our staff.

We foresee this growth proceeding steadily and almost uniformly over the course of the next ten years. Our faculty will grow by about 8 per year, and the size of our entering freshman class by about 30 students each year. We will maintain our current ratio of students to faculty. This growth calls for significant investment in new space.

Academic Infrastructure
Our provisional assessment is that we will need at least 80,000 net square feet of new academic space. Because it is infeasible to provide modern science facilities through the renovation of old buildings, new construction is likely to be focused on science space. The broad distribution of disciplines embraced by our initiatives means that we are likely to need space in every academic department. We therefore need to consider moving whole departments and grouping them more coherently to make optimal use of space.

Residential Life
Having a residential campus is central to our identity, and provides for an exceptionally rich undergraduate experience. About 80% of our undergraduates live on campus. Growth in the number of undergraduates, plus the increase in the number of students in master's and post-baccalaureate programs, means that we will need to provide housing for at least 800 more students. Some of that will be provided by the new Riverview development (see box), but we will need to develop more. We are eager to foster the development of a College Town, so we will want to consider carefully what emphasis to place on additional campus housing vs. housing of the type represented by Riverview.
Investments already planned for dining services will increase our capacity by approximately 400 students, so growth will require us to provide for 600 more undergraduates, and additional graduate students. This would require at least one new dining facility.

**Supporting Us**

Gifts to the College from alumni, parents and friends provide tremendous benefit to students and faculty. Contributions aid programs at the core of our mission, as well as projects that might not otherwise come to fruition. Gifts provide funding for scholarships, which allow the brightest students to attend regardless of financial ability. They allow for special programs and speakers, which augment faculty expertise to enhance each student’s experience. And, they enable upgrades in technology across campus to enhance all facets of learning. Each gift is crucial, and builds upon the legacy of philanthropy at the University of Rochester begun by George Eastman.

If you would like to speak to someone about supporting us, please contact:

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