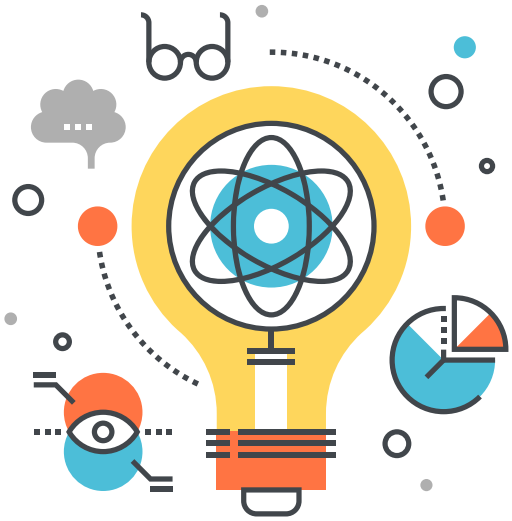
A GUIDE FOR TECHNOLOGY COMMERCIALIZATION

at the University of Rochester

UR Ventures
UNIVERSITY OF ROCHESTER

Our mission is to ensure that University of Rochester innovations enrich our community, improve our society, and make the world *ever better.*



UR Ventures
University of Rochester Technology Transfer Office
601 Elmwood Ave. | Box URV | Rochester, NY 14642
Phone: 585-276-6600
Fax: 585-785-8829
Email: URVenturesInfo@urmc.rochester.edu

This guide was created to help University of Rochester **faculty members, post-doctoral fellows, students, staff, and affiliates** better understand how technology is transferred out of the University environment and into external organizations such as established companies. This resource will provide **basic knowledge**, **best practices**, **useful resources**, **and answers to common questions**. Our goal is to give you a framework to improve your chances of commercializing your technology.

Note: This guide is based in part on the University of Michigan's "Inventor's Guide to Technology Transfer" and Penn State's "Inventor's Guide to Technology Transfer". This guide has been updated and modified to reflect the specific policies and procedures of the University of Rochester and UR Ventures. We would like to thank the University of Michigan and specifically Kelly Sexton and the staff of Innovation Partnerships, as well as the Pennsylvania State University and specifically Bin Yan and the staff of Office of Technology Management for their kind permission to use excellent material from their respective guides. We also thank Drew Yashar, Venture Associate at the Capital Factory, for his contributions to the resources section.

TABLE OF CONTENTS

CHAPTER 1 Introduction to UR Ventures

Bayh-Dole Act

In 1980, Congress passed the Bayh-Dole Act, a pivotal piece of US legislation that allows universities, small businesses, and non-profit organizations to retain ownership of inventions developed through federally funded research. Prior to the Act, the federal government held the patents for such inventions, often resulting in limited commercialization. Bayh-Dole revolutionized technology transfer by giving institutions the right to patent and license these inventions, thereby fostering innovation and encouraging collaboration between academia and industry. The Act has significantly contributed to the growth of the biotechnology and high-tech industries, facilitating the transformation of academic research into marketable products and services, creating jobs, and stimulating economic growth. Note that the Bayh-Dole Act only applies to federally funded research, not research which is funded by New York state or industry.

Under the Bayh-Dole Act, Universities have certain responsibilities, including reporting inventions to the funding institution(s) in a timely manner, and sharing income from those inventions with the inventors. In addition, though rarely exercised, the federal government gets certain rights to the inventions. To keep up with the extensive reporting requirements, and to ensure compliance with Bayh-Dole, most universities have established an office to coordinate technology transfer activities.

At the University of Rochester, this office is **UR Ventures**.

Team

The UR Ventures team is led by Associate Vice President Harl Tolbert and consists of an array of professionals with specialized expertise in patent law, science, medicine, and business. Learn more about the UR Ventures team here.

What we do

UR Ventures collaborates with faculty, staff, and students across all the University of Rochester campuses to identify, assess, protect, develop, and commercialize the University's intellectual property (IP), including patents, copyrights, and trade secrets. UR Ventures also handles license compliance and maintenance, revenue distribution of licensing income, and contract negotiation. Our team assesses the patentability and market potential of University IP, working closely with researchers, attorneys, and business professionals to develop IP assets.

Each commercially viable technology is assigned a technology licensing specialist who collaborates with researchers to identify industry partners for development or licensing. If a technology is better suited for a startup, UR Ventures assists researchers in gathering industry feedback, forming a founding team, negotiating licenses, and securing startup funding.

Key Metrics (FY2024)

- **124** Invention Disclosures
- **104** Patent Applications
- **~40 US** Patents Issued
- **$2,322,853** in Licensing Revenue
- **29** New License Agreements

CHAPTER 2 Technology Transfer Overview

Introduction

Technology transfer is the process through which scientific discoveries and inventions developed in research institutions, such as universities, are translated into commercial products, services, or processes. This involves licensing intellectual property rights to industry partners or creating startup companies to further develop and market the technology. The goal of technology transfer is to promote innovation, enhance public benefit, and generate economic value from academic research.

Intellectual Property Basics

Intellectual Property (IP) refers to creations of the mind, such as inventions, literary and artistic works, designs, symbols, names, and images used in commerce. IP is protected by law, enabling creators to earn recognition or financial benefit from what they invent or create.

Key Terminology

- **Idea**: An idea is a conceptual thought or inspiration that originates in the mind, representing a potential solution, concept, or innovation. It is intangible and does not yet have any formal protection or recognized commercial value.

- **Invention**: An invention is a tangible creation or discovery that results from the development and refinement of an idea. It may include novel processes, machines, manufacturing methods, or compositions of matter, as well as any new and useful improvements to existing ones. To qualify for patent protection, the invention must be useful, novel, and non-obvious. In addition, the invention must be sufficiently detailed to enable replication by others skilled in the field. The invention must have been conceived by humans – machine generated inventions are not eligible for patent protection. Finally, laws of nature, abstract ideas, and mathematical algorithms are generally not patentable.

.

- **Patents:** Protect inventions by granting the patent holder the right to exclude other parties from using and commercializing the invention for a certain period, typically 20 years from the filing date. Patents do not convey the right to use the invention, since that can depend on other factors such as related patents held by other parties.

- **Trademarks**: Protect brand names, logos, and slogans that distinguish goods or services.

- **Copyrights**: Protect original works of authorship, such as books, music, and software, giving the creator or assignee exclusive rights to use and distribute the work.

- **Inventor**: In general terms, an inventor is someone who contributed to the conception of the invention or to the creative further development of an important element of the invention in reducing it to practice. Inventorship is not the same as authorship, however. A “pair of hands” who only carried out the orders of another person is not an inventor, even though such a person may be considered a co-author or contributor in a scholarly sense. Inventorship has a legal definition and will be determined by a patent attorney at the time of filing of any patent application. If needed, please contact UR Ventures for further guidance.

IP Policy at UR

The University of Rochester implements robust intellectual property policies to govern the ownership, management, and commercialization of inventions and discoveries stemming from its research endeavors. These policies provide clear guidelines for faculty, staff, and students on disclosing innovations, securing patents, negotiating licenses, and distributing revenues generated from IP. By doing so, the university aims to foster innovation, protect academic freedom, and cultivate productive partnerships with industry, ensuring equitable sharing of benefits derived from its intellectual assets.

- **Invention Disclosure**: Researchers are required to disclose inventions to UR Ventures. This ensures compliance with the Bayh-Dole Act, intellectual property terms in sponsored research agreements, and observance of our obligations as a non-profit research institution. It also ensures proper and timely assessment of the invention's potential and protection.

- **Intellectual Property Agreements**: All individuals at or affiliated with the University making a significant use of University resources, including some students and visiting scholars, are required to sign an Intellectual Property Agreement assigning IP rights to the university. To promote and incentivize IP generation, the University agrees to share with inventors a portion of any revenue generated from licensing or commercialization.

- **Joint Ownership**: If research is conducted in collaboration with other institutions or companies, joint ownership agreements specify the distribution of rights and responsibilities among co-owning parties. These types of agreements include Inter-Institutional Agreements, discussed further below, when the parties are academic research institutions.

The University of Rochester IP policy can be found here.

Reasons to Participate in the Technology Transfer Process

The reasons are unique to each researcher and may include:

- Making a positive impact on society
- Feeling a sense of personal fulfillment
- Achieving recognition, such as becoming a member of the National Academy of Inventors
- Financial rewards
- Generating additional lab/departmental funding
- Meeting the obligations of a research contract
- Attracting research sponsors
- Creating educational opportunities for students
- Generating future job opportunities for students

Overview of the Technology Transfer Process

The technology transfer process involves moving innovations from the university environment to the marketplace. This process typically includes the following steps:

1. **Research**: This initial step involves conducting scientific or technological research within the university setting to explore new ideas and discoveries with potential commercial applications.

2. **Invention Disclosure**: Researchers formally disclose their invention to the UR Ventures office, providing detailed information on the invention's concept, application, and potential benefits, which initiates the evaluation process. This disclosure is confidential and allows UR Ventures to assess the invention's commercial potential and determine whether and what kind of intellectual property protection should be sought.

3. **Assessment**: UR Ventures assesses the disclosed invention's market potential, patentability, and commercial viability. This might involve market research and non-confidential discussions with potential industry partners.

4. **Protection**: If the invention is deemed suitable for IP protection, UR Ventures will pursue IP protection, usually by filing a patent application. UR Ventures will engage outside counsel to draft a patent application based on detailed documentation of the invention provided by the researchers. Researchers also provide feedback on patent drafts.

5. **Marketing**: UR Ventures markets the invention to potential licensees, including startups and established companies.

6. **Licensing**: Once a suitable licensee is identified, negotiations begin to establish a licensing agreement that grants the entity the right to use and commercialize the invention in exchange for royalties or other compensation.

7. **Commercialization**: The licensee develops the invention into a marketable product or service. This stage may involve additional research and development, regulatory approvals, manufacturing, marketing, sales, and distribution efforts.

8. **Revenue Sharing**: Revenue generated from licensing agreements is shared between the university, the inventors, and UR Ventures according to the University's IP policy. Revenue generated from licensing agreements, royalties, equity stakes, or other commercialization activities provides financial returns to the university; supports ongoing research, innovation, and academic initiatives; and rewards inventors for their innovative contributions.

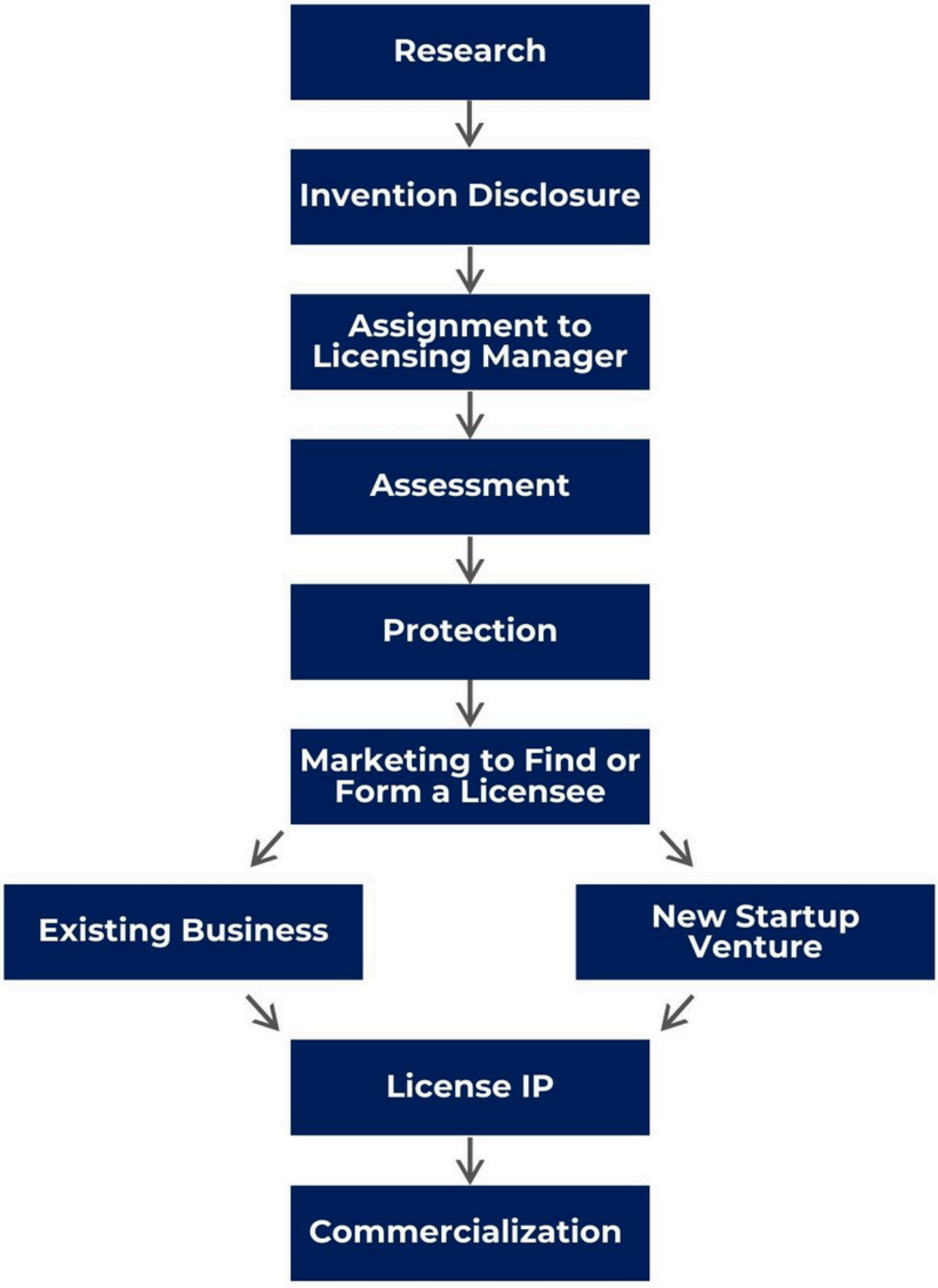


Figure 1. Schematic showing process of commercialization of university research discoveries.

Frequently Asked Questions (FAQs)

How long does the tech transfer process take?
The process of protecting the technology and finding the right licensing partner may take months—or even years—to complete. The amount of time will depend on the development stage of the technology, the market for the technology, competing technologies, the amount of work needed to bring a new concept to market-ready status, and the resources and willingness of the licensees and the inventors.

Can a student contribute to an invention?
Yes, students can and do contribute to inventions at UR under a wide variety of circumstances. Students should be named as Inventors when appropriate. Typically, undergraduate students own their rights to an invention unless the student made significant use of University resources in conceiving the invention—for example by operating in their capacity as a UR employee or by utilizing equipment not generally available—or the student signed an Intellectual Property Agreement or some other related agreement with the University (refer to the UR IP Policy for more details). As a condition of their employment, Graduate Students and Post Docs sign an Intellectual Property Agreement which states that all IP developed as a result of their efforts belongs to the University.

CHAPTER 3

Research and Development Considerations

Introduction

When engaging in research with commercial potential, university entrepreneurs must consider several critical factors to ensure their projects are successful and compliant with institutional and legal requirements.

Key considerations include:

- **Funding Sources**: Understand the implications of different funding sources (e.g., federal grants, private sector funding) on IP ownership and commercialization rights. Funding agreements often have specific terms that can affect IP rights and revenue sharing.

- **Collaborations**: Work with the Office of Research and Project Administration (ORPA) and UR Ventures to establish clear agreements with collaborators, whether they are other academic institutions, private companies, or individual researchers. These agreements should outline IP ownership, contribution rights, confidentiality obligations, and the sharing of research outcomes.

- **Regulatory Compliance**: Ensure compliance with relevant regulations, such as those governing human subjects, animal research, and biosafety. Non-compliance can lead to legal issues and jeopardize the commercialization of the research.

- **Data Management**: Implement robust data management practices to ensure the integrity, security, and accessibility of research data. Proper documentation is crucial for IP protection and future commercialization efforts.

- **Publication and Disclosure**: Balance the need for academic publication with the protection of IP. Premature disclosure of research findings can jeopardize patentability. Coordinate with UR Ventures to ensure IP protection measures are in place prior to publicly disclosing new inventions.

Types of Agreements

- **Confidentiality Disclosure Agreements**
  - A Confidentiality Disclosure Agreement (CDA), also known as a Non-Disclosure Agreement (NDA), is a legal contract between two or more parties that outlines the terms and conditions under which confidential information is shared and protected. Its primary purpose to ensure that any disclosed sensitive information remains private and is not shared with unauthorized third parties. CDAs are commonly used to protect proprietary information, trade secrets, and other confidential data during negotiations or collaborations. CDAs also protect proprietary information of third parties that UR researchers need to review in order to conduct research or evaluate research opportunities. Universities usually prefer a two-way CDA to ensure that both parties' confidential information is equally protected during academic and research collaborations. UR Ventures enters into CDAs for UR proprietary information shared with someone outside of UR. ORPA manages CDAs related to research contracts and potential research relationships, while UR Ventures manages CDAs intended to facilitate discussions about intellectual property.

- **Material Transfer Agreements**
  - Material Transfer Agreements (MTAs) are legally binding contracts governing the transfer of tangible research materials between two organizations or entities, typically for research or evaluation purposes. MTAs are essential for defining the rights, responsibilities, and obligations of both the provider and the recipient of the materials. Intellectual property rights can be endangered if materials are exchanged without a proper MTA. MTAs used for incoming and outgoing materials are administered by ORPA.

  - Key elements of MTAs include:
    - **Purpose of Transfer**: Specify the purpose for which the materials will be used. This helps prevent misuse or unauthorized applications of the materials.
    - **Ownership and Rights**: Define the ownership of the materials and any derivatives or modifications made using the materials. Typically, the provider retains ownership, while the recipient may be granted rights to use the materials for the specified research purpose.

- **Confidentiality**: Include confidentiality clauses to protect proprietary information and trade secrets associated with the materials. This ensures that any unpublished data or sensitive information remains secure.

- **Publication Rights**: Establish terms regarding the publication of research results obtained using the transferred materials. The agreement should balance the recipient's right to publish with the provider's need to protect confidential information and IP.

- **IP Rights**: Address the IP rights related to inventions or discoveries arising from the use of the transferred materials. This includes determining whether the recipient will have any claims to IP or whether all rights remain with the provider.

- **Liability and Indemnification**: Outline the responsibilities and liabilities of both parties in case of misuse, accidents, or legal issues arising from the use of the materials. This typically includes indemnification clauses to protect the provider from legal claims.

- **Termination and Dispute Resolution**: Define the terms for terminating the agreement and the procedures for resolving disputes. Clear termination clauses ensure that both parties understand their obligations and rights upon the agreement's end.

- **Sponsored Research Agreements**
  - A Sponsored Research Agreement (SRA) is a formal contract between a university and an external entity, such as a corporation, government agency, or non-profit organization, to fund and conduct specific research projects. This agreement outlines the scope of the research, funding obligations, IP rights, publication rights, and any other terms and conditions necessary for the successful collaboration. SRAs ensure that both parties have clear expectations and legal protections regarding the research outcomes and the use of any resulting discoveries or innovations. These agreements are negotiated by ORPA with support from UR Ventures on IP terms.

- **Consulting Agreements**
  - A consulting agreement for a faculty member is a contract between the faculty member and an external organization (such as a company, government agency, or non-profit) that outlines the terms and conditions under which the faculty member will provide consulting services. Consulting agreements, particularly with companies, often contain IP provisions that may be counter to a faculty member's existing obligations to the University. Faculty should work with ORPA and the Office of Counsel prior to signing a consulting agreement to ensure compliance with University policies (see the following policy documents: Updated Guidance on Consulting Activities and General Overview Guidance and Advice for Faculty Who Engage in Outside Consulting)

- **Intellectual Property Agreement**
  - As mentioned in Chapter 2, all individuals at or affiliated with the University making a significant use of University resources, including some students and visiting scholars, are required to sign an Intellectual Property Agreement assigning IP rights to the university. To promote and incentivize IP generation, the University agrees to share with inventors a portion of any revenue generated from licensing or commercialization. The UR IP policy can be found here.

- **Joint Ownership Agreements**
  - These agreements describe the terms under which IP jointly owned by research institutions and/or industry are managed.

- **Inter-Institutional Agreements**
  - These agreements describe the terms under which two or more institutions (e.g., two universities) will collaborate to assess, protect, market, license, and share in the revenues received from licensing jointly-owned IP or closely related but separately owned IP.

- **Option Agreements**
  - The option clauses within research agreements describe the conditions under which UR preserves the opportunity for a third party to negotiate a license for IP. Option clauses are often provided in a Sponsored Research Agreement to corporate research sponsors at UR; option agreements are entered into with potential licensees wishing to evaluate the technology prior to entering into a full license agreement.

Frequently Asked Questions (FAQs)

Will I be able to publish the results of my research and still protect the commercial value of intellectual property?
Yes, but since patent rights are affected by these activities, it is best to submit an Invention Disclosure (discussed in next section) far prior to communicating or disclosing your invention to people outside UR. Discovery of adverse public disclosures can invalidate patent rights even years after the patent has been awarded, so be sure to inform UR Ventures of any imminent or prior presentation, lecture, poster, abstract, website description, research proposal submission, dissertation/masters thesis or defense, publication, or other public presentation including the invention. There are also significant differences between the US and other countries as to how an enabling public disclosure (i.e., publication, presentation at a conference, student thesis publication, student thesis defense, discussion with industry) affects the ability to patent. Once publicly disclosed (published or presented in some form), an invention may not be eligible for patent protection outside of the US. For US patent filings, inventors have up to 1 year from the earliest date of public disclosure of their invention to file a patent application. This 1-year grace period only applies to the inventor's own prior public disclosures.

Can I use material or intellectual property from others in my research?
Yes, but it is important to document carefully the date and conditions of use so that we can determine if this use may influence the ownership and license rights of your subsequent research results. If you wish to obtain materials from outside collaborators, an incoming Material Transfer Agreement (MTA) should be completed. Contact ORPA for more information on incoming MTAs.

Will I be able to share materials, research tools, or intellectual property with others to further their research?
Yes. However, it is important to document items that are to be shared with others and the conditions of use. If you wish to send materials to an outside collaborator, an outgoing Material Transfer Agreement (MTA) should be completed for this purpose. It also may be necessary to have a Confidentiality Agreement completed to protect your research results or intellectual property. Contact ORPA to assist you in completing outgoing MTAs or Confidentiality Agreements.

Who owns rights to discoveries made while consulting?
The ownership of inventions made while consulting for an outside company depends on the terms of your consulting contract. It is important to clearly define the scope of work within consulting contracts to minimize any issues with ownership of inventions created from University research. Individuals may not assign ownership of inventions created with significant use of University resources (as defined in Section 2.1.1 of IP policy) to third parties. The UR Office of Counsel is available to review agreements with outside entities for faculty, and to advise them about any changes that would be necessary to ensure the agreements are not inconsistent with University policies, and faculty are strongly encouraged to submit proposed agreements with outside entities to the Office of Counsel for such review.

Who owns rights to discoveries made while on sabbatical?
Generally, if you are on a sabbatical paid by the University, UR still retains rights to any discoveries connected to your scope of employment. However, it is important to address the ownership of IP with the host institute prior to starting the sabbatical. Contact UR Ventures before your sabbatical to ensure that ownership considerations are documented.

Can someone patent a naturally occurring substance?
Not in its natural state. However, a natural substance that has never before been isolated or known may be patentable in some instances, but only in its isolated form (since the isolated form had never been known before). A variation of a naturally occurring substance may be patentable if an inventor is able to demonstrate substantial nonobvious modifications that offer significant advantages in using the variant. As an example, while a nucleic acid sequence cannot be patented, synthetically produced nucleic acids, even with the same sequence as the naturally occurring form, may be patentable.

CHAPTER 4 Invention Disclosure and Assessment

Introduction

Invention disclosure is a critical step in the process of moving from idea to market. At the University of Rochester, this involves formally presenting your innovative concepts and discoveries to UR Ventures. This step initiates the evaluation of intellectual property, paving the way for potential partnerships, licensing agreements, and the practical application of new technologies.

Invention Disclosure

In technology transfer, a disclosure is a formal notification to the institution's technology transfer office about a new invention or discovery. The disclosure provides detailed information on the invention's concept, functionality, potential applications, and circumstances under which the invention was conceived and disclosed, initiating the evaluation process for commercialization opportunities. You should complete an invention disclosure whenever you feel you have discovered something unique with potential commercial value. This should be done far prior to presenting the discovery through publications, poster sessions, conferences, press releases, or other communications. Once publicly disclosed (published or presented in some form), an invention may not be eligible for patent protection outside of the United States.

Be sure to inform UR Ventures of any imminent or prior presentation, lecture, poster, abstract, website description, research proposal, dissertation/masters thesis or defense, publication, or other public presentation describing the invention.

Carefully list sources of funding which were used in the conception of the invention as the funding entities may have certain rights to the invention. These rights often include an obligation that the University promptly communicate the invention to the sponsor and may give the sponsor the opportunity to take a license to the technology.

- Disclose your invention to UR Ventures here. Within approximately 1 week, UR Ventures will assign a unique Technology ID number to your disclosure, and a UR Ventures technology licensing specialist will then contact you to arrange an introductory meeting.

Assessment

The assigned UR Ventures technology licensing specialist will review the novelty of the invention, protectability and marketability of potential products or services, relationship to related intellectual property, size and growth potential of the relevant market, amount of time and money required for further development, pre-existing rights associated with the intellectual property (IP), and potential competition from other products/technologies. This assessment may also include consideration of whether the IP can be the basis for a new business startup. Based on this assessment, UR Ventures will determine whether to pursue IP protection, or to recommend continued development of the invention for protection at a later time.

Frequently Asked Questions

How do I know if my discovery constitutes an invention?
You are encouraged to submit an Invention Disclosure for all inventions and developments that you feel may solve a significant problem and/or have potential commercial value. If you are in doubt, contact UR Ventures to discuss the invention and strategies for commercialization.

Should I disclose research tools?
Yes, if your new tools would benefit other researchers and you are interested in providing them to the research community. Typically, life science research tools are materials such as antibodies, vectors, plasmids, cell lines, mice, and other materials used as “tools” in the research process. Engineering tools include manufacturing, sensing, metrology, or inspection tools. Most life science research tools do not necessarily need to be protected by patents in order to be licensed to commercial third parties. If engineering tools address products in a large and valuable market, they may be worth patenting. If you have research tools that you believe to be valuable or wish to provide to others (including research collaborators), UR Ventures will work with you to develop the appropriate protection, licensing, and distribution strategy.

Should I list visiting scientists or scientists at other institutions on my invention disclosure?
All contributors to the ideas leading to a discovery should be mentioned in your disclosure, even if they are not UR employees. UR Ventures, with support from outside counsel, will determine who should be listed as inventors on any patent applications and the related rights of such persons and their institutions. It is prudent to discuss with UR Ventures all working relationships (preferably before they begin) to understand the implications for any subsequent inventions.

If the inventors believe that all IP should be licensed non-exclusively to all potential users for the public good, will the University honor this request?
UR Ventures will work with you to develop the appropriate commercialization strategy for the invention. Some technologies lend themselves to non-exclusive licensing (licensing to multiple third parties), while others will only reach the commercial marketplace, and therefore the public, if they are licensed on an exclusive basis. We will try to accommodate inventors' commercialization wishes. However, the final decision will be determined by our assessment of which strategy will produce the most benefits for the general public, consistent with governmental or institutional policies and other obligations.

How does UR Ventures decide whether to commercialize with a traditional or an "open source" license for software?
Generally, UR Ventures supports University software developers who choose to essentially give their software away through open source mechanisms, provided the University retains the right to distribute the software freely, that open sourcing is consistent with obligations to sponsors, and that each developer's department or academic unit supports the decision.

CHAPTER 5

Patents and Other Legal Protection

Introduction

Once UR Ventures has deemed an invention viable for protection, there are multiple options and routes that can be considered for safeguarding the intellectual property. This section explores the different legal protections in detail.

Patents

A patent is a legal instrument granting the owner the exclusive right to prohibit other parties from making, using, selling, and distributing the invention for a limited period, typically 20 years from the filing date. Patents incentivize innovation by providing patent owners a temporary monopoly over the commercial exploitation of their inventions, allowing them to recoup research and development costs and profit from their innovation without competition for a limited period. This exclusivity motivates inventors and companies to invest in developing new technologies, knowing that they will have time to monetize their efforts before others can legally replicate their work.

There are three main types of patents:

1. **Utility Patents**: Cover new and useful processes, machines, manufacture, or compositions of matter. This is the most common type of patent and applies to a wide range of innovations, from technological devices to pharmaceuticals.

2. **Design Patents**: Protect new, original, and ornamental designs for manufactured products. These patents focus on the appearance rather than the functionality of an item.

3. **Plant Patents**: Granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.

There are two types of patent applications:

- A **provisional patent application** is a temporary application that establishes an early filing date and allows the inventor to use the term "patent pending" for 12 months, without starting the official examination process. It is less formal, requires fewer details, and typically costs less than a non-provisional application. However, it does not mature into an issued patent unless the inventor files a corresponding non-provisional application within the 12-month period.

- A **non-provisional patent application**, on the other hand, is the formal application required for obtaining a patent. It can take the form of a direct filing in a particular country or an international filing (further discussed below), also known as a Patent Cooperation Treaty (PCT) application. For direct filings, the non-provisional patent application undergoes a thorough examination by the national patent office, includes detailed claims defining the invention, and can lead to an issued patent granting exclusive rights to the inventor. The PCT applications follow a slightly different process; after up to 18 months from PCT filing, the application is sent to select national offices for examination. See Figure 2 for patent filing timelines.

In general, all patent applications are published around 18 months after the earliest filing date claimed by the applicant. If the application claims priority, such as priority to a provisional application, then the projected publication date is approximately 18 months after the filing date of the provisional application. Upon publication, the patent application becomes publicly available even if it hasn't been granted as a patent yet. Published patent applications can be searched on the U.S. Patent Office website.

Patent Application Process

The process of obtaining a patent involves several steps:

1. **Invention Disclosure**: Inventors document and disclose the invention to UR Ventures. This documentation should include detailed descriptions, drawings, and any supporting data.

2. **UR Ventures Review**: After an invention or creation is disclosed to UR Ventures, UR Ventures will review, possibly with the assistance of an outside expert source, the technology with the inventor(s) or author(s) and evaluate its potential for licensing. If UR Ventures concludes at that time that the invention or creation is novel, non-obvious, and its potential value is sufficient to justify further efforts toward filing a patent application or securing other appropriate legal protection, an assignment agreement will then be executed with inventor(s) or author(s).

3. **Patent Application Preparation**: Outside counsel prepares a patent application that includes a detailed description of the invention, claims defining the scope of protection sought, and any necessary drawings. Inventors work with outside counsel to provide additional documentation

4. **Filing the Application**: Outside counsel submits the patent application to the relevant patent office (e.g., the United States Patent and Trademark Office, USPTO). The filing date is crucial as it establishes the priority of the invention.

5. **Patent Examination**: The patent office examines the application to ensure it meets all legal requirements, including novelty, non-obviousness, and utility. This process may involve working with outside counsel to respond to office actions (further discussed in the FAQ below) or objections raised by the examiner.

6. **Patent Grant**: If the application is approved, the patent office grants the patent, providing the inventor with exclusive rights to the invention.

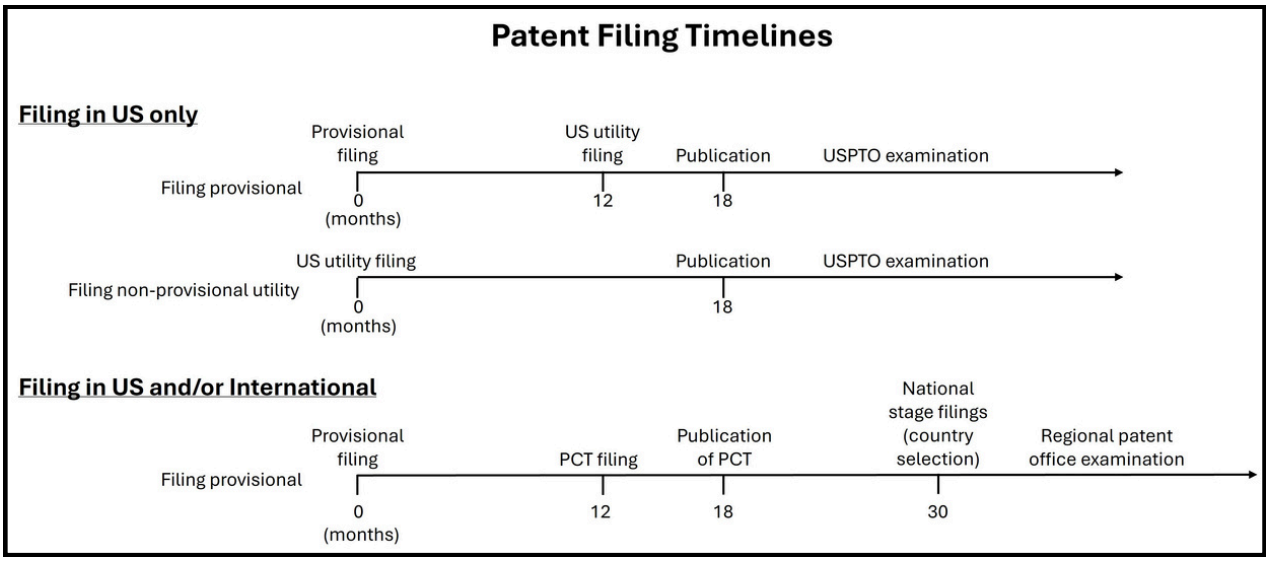


Figure 2. Patent filing timelines for U.S. only and PCT patent application pathways.

Role of the Inventor in the Patent Process

The academic entrepreneur can impact UR Ventures' decision to file a patent by providing valuable insights that strengthen the case for the invention. With their deeper understanding of the invention's potential uses, market opportunities, and licensing prospects, as well as knowledge of competitors and prior art, they are uniquely positioned to offer critical information. Proactively sharing this data with UR Ventures not only improves the chances of securing a patent but also enhances the overall quality and strategic value of the patent itself.

To patent an invention, academic entrepreneurs must first submit an invention disclosure to their university, providing details about the invention, co-contributors, market potential, any competitors, and past or future invention disclosures. Filing the disclosure promptly is crucial as the U.S. follows a "first to file" system—that is, the first group to file a patent application, not necessarily the first to invent, obtains the patent protection.

Importantly, “disclosure” also includes any activity where the invention is made public, such as publishing an abstract or paper, giving a talk, presenting a poster, blogging, submitting a grant proposal that will be publicly available. Therefore, the inventor should consult with UR Ventures prior to any potential disclosure. The disclosure should be submitted once the invention is conceived, even if it is not fully developed, as UR Ventures can guide the next steps.

Early-stage inventions can be protected through strategies like filing provisional patents, which secure a filing date while allowing time for further development.

After filing the disclosure, the inventor continues to play a key role in supporting the patent process by aiding the attorney in researching prior art and drafting claims tailored to market needs. Additionally, inventors have an ongoing legal duty to disclose any relevant prior art throughout the patent process.

Other Forms of Legal Protection

While patents are important, they are not the only form of legal protection for intellectual property. Other protections include:

- **Trademarks**
  - Definition: Trademarks protect brand names, logos, and slogans that distinguish goods or services.
  - Protection: Registering a trademark grants the exclusive right to use the mark in commerce, preventing others from using similar marks that could cause confusion.

- **Copyrights**
  - Definition: Copyrights protect original works of authorship, such as literature, music, art, and software.
  - Protection: Copyrights grant the creator exclusive rights to reproduce, distribute, perform, and display the work. Protection lasts for the creator’s lifetime plus 70 years.

- **Trade Secrets**
  - Definition: Trade secrets include confidential business information that provides a competitive edge, such as formulas, practices, designs, and processes.
  - Protection: Unlike patents, trade secrets are protected without registration as long as the information remains confidential and measures are taken to protect its secrecy.

Frequently Asked Questions (FAQs)

What is the USPTO?
The United States Patent and Trademark Office (USPTO) is the federal agency, organized under the Department of Commerce, that administers patents on behalf of the government. The USPTO employs patent examiners skilled in all technical fields in order to examine patent applications. The USPTO also issues federal trademark registrations. Check out the USPTO page for upcoming events including webinars on patent basics.

What is a PCT application?
The Patent Cooperation Treaty (PCT) is an international treaty ratified by 157 countries (as of Dec. 2022) that simplifies the process of filing patents in multiple countries. Administered by the World Intellectual Property Organization (WIPO), the PCT allows inventors to file a single international patent application that has the same effect as filing separate national or regional patent applications in each of the member countries. The PCT process involves two main phases: the international phase, which includes the filing of the PCT application and an international search to assess the invention's patentability, and the national phase, where the application is examined according to the patent laws of each designated country. The PCT system helps inventors save time and money, and it provides an extended timeframe to decide in which countries to pursue patent protection. The PCT application provides two advantages. First, it delays the need to file costly foreign applications until 30 months after the earliest filing date. This 30-month period gives an applicant the opportunity to further develop, evaluate and/or market the invention for licensing. Second, the international preliminary examination often allows an applicant to simplify the patent prosecution process by having a single examiner assess the patentability of the claims, which can save significant costs in prosecuting foreign patent applications.

What is an Office Action?
An office action is an official communication from a patent office examiner regarding the examination of a patent application. It outlines the findings of the examiner after reviewing the application and may include objections, rejections, or requests for additional information. There are two main types of office actions:

- Non-Final Office Action: Issued during the initial examination, it details any deficiencies in the application, such as issues with the claims, prior art rejections, or formalities that need correction. The applicant is given an opportunity to respond, amend the claims, or provide arguments to overcome the examiner's objections.

- Final Office Action: Issued if the examiner's objections are not resolved after the applicant's response to the non-final office action. It represents the examiner's final stance on the issues, though the applicant can still respond with amendments, file a request for continued examination (RCE), or appeal the decision to the patent office's appeal board. Final Office Actions can be both difficult and expensive to overcome.

Office actions are a crucial part of the patent prosecution process, allowing applicants to refine their claims and address any issues to move closer to obtaining a granted patent.

How does foreign patent protection work?
Foreign patent protection is subject to the laws of each individual country, although in a general sense the process works much the same as it does in the United States. Importantly, in most foreign countries, an inventor will lose any patent rights if they publicly disclose the invention prior to filing of the first (or "priority") application in one country. In contrast, the United States has a one-year grace period in which a patent may be filed after any enabling public disclosure.

What is the timeline of the patenting process and resulting prosecution?
Currently, the average US utility patent application is pending for about three years, though inventors in the biotech and computer fields should plan on a longer waiting period. Once a patent is issued, it is enforceable for 20 years from the initial filing of the application that resulted in the patent, assuming that USPTO-mandated maintenance fees are paid.

What does it cost to file for and obtain a patent?
The cost of a provisional patent application can range between $2,000 to $10,000. Filing a regular US patent application may cost an additional $4,000 to $12,000. To obtain an issued patent may require an additional $10,000 to $20,000 for patent prosecution. Filing international applications can greatly increase these costs. Generally, it is more expensive to file, prosecute, and maintain a foreign patent application. Without a licensee, UR Ventures rarely pursues international patent protection beyond filing a PCT because it is cost prohibitive.

CHAPTER 6

Marketing a Patent or Technology to Find a Licensee

Introduction

At the University of Rochester, UR Ventures technology licensing specialists take the lead in identifying and engaging potential licensees, leveraging their expertise and industry connections. However, inventors are encouraged to stay involved, offering their unique insights and networks to support these efforts. This collaborative approach between technology licensing specialists and inventors is essential for successfully marketing and commercializing new technologies.

Marketing Process

1. **Evaluate the Market Potential**
   Before marketing the patent, UR Ventures works with inventors to assess the invention's market potential and demand. This evaluation involves:

   - **Market Research**: Market research is used to identify potential applications, target industries, and key market players to help us understand the size of the market, growth trends, and competitive landscape.

   - **Competitive Analysis**: Analysis of existing products and technologies in the market reveals gaps that the patented invention can fill and how it compares with competitors in terms of innovation, cost, and performance.

2. **Prepare Marketing Materials**
   Effective marketing materials are crucial for attracting potential licensees. These materials should clearly communicate the value and advantages of the patented invention. Key components include:

   - **Non-Confidential Summary**: A concise summary highlighting the invention's key features, benefits, and market potential. The non-confidential summary is typically drafted by technology licensing specialists and reviewed by inventors for accuracy.

- **Technical Description**: Detailed information about the technology, including how it works, its unique aspects, and supporting data or research findings. The technical description is typically created and maintained by the inventors. It often takes the form of a curated set of non-confidential slides which can be presented to interested companies on conference calls.

- **Visual Aids**: Diagrams, prototypes, or demonstration videos may sometimes be used to visually showcase the invention and its applications. These can be incorporated into the Technical Description, as appropriate.

3 Identify Potential Licensees

Identifying the right potential licensees involves targeting companies and organizations that could benefit from the invention. This can be done through:

- **Inventors**: Studies have shown that a large majority of licensees were already known to the inventors. In many cases, inventors may have contacts that can lead to licensing discussions. Research and consulting relationships are often a valuable source for licensees.

- **Industry Connections**: Industry contacts, professional networks, and university partnerships can help identify potential licensees.

- **Trade Shows and Conferences**: Industry-specific trade shows, conferences, and networking events facilitate interaction with potential licensees and provide a forum to showcase the invention.

- **Online Databases and Marketplaces**: Online platforms connect inventors with potential licensees, such as technology transfer networks and IP marketplaces.

4 Initial Outreach

Once potential licensees are identified, UR Ventures will initiate contact to gauge the potential licensee's interest. Effective outreach strategies include:

- **Personalized Communication**: Personalized emails or letters are sent to key decision-makers within the target companies, and highlight how the invention aligns with their business goals and addresses their specific needs.

- **Phone Calls**: Emails are followed up with phone calls to discuss the invention in more detail and answer any initial questions.

- **Leveraging Technology Transfer Office Networks**: UR Ventures leverages its network and resources to facilitate introductions and endorsements.

5 Present the Invention

When a potential licensee shows interest, the invention is presented in a more detailed and engaging manner, almost always with participation from the inventor(s). This can be done through:

- **Meetings and Presentations**: Face-to-face meetings or virtual presentations are arranged to provide an in-depth overview of the invention. Demonstrations and prototypes help to illustrate the technology's potential.

- **Technical Discussions**: Detailed technical discussions are used to address questions or concerns the potential licensee may have. These discussions may require additional data, research findings, and expert opinions.

6 Negotiate the Licensing Agreement

If the potential licensee is interested in moving forward, UR Ventures will negotiate the licensing agreement. Key aspects that are negotiated include:

- **License Type**: The license can be exclusive or non-exclusive. Exclusive licenses grant rights to a single licensee, while non-exclusive licenses can be granted to multiple entities. Exclusive rights in a specific field of use can provide exclusivity to multiple parties in different markets.

- **Financial Terms**: Financial terms include upfront fees, milestone payments, patent expense reimbursement, royalties, and any minimum annual payments.

- **IP Management**: To ensure both parties understand their obligations regarding IP management, the license agreement also outlines responsibilities for patent maintenance, enforcement, and defense.

- **Development and Commercialization Milestones**: To ensure the licensee is committed to bringing the product to market, the license includes binding milestones for development and commercialization.

See Chapter 7 for more details on the License Agreement.

7 **Monitor and Support the Licensee**

After the agreement is signed, UR Ventures and the inventors should maintain a relationship with the licensee to ensure successful commercialization. This involves:

- **Regular Communication**: Regular contact with the licensee is used to monitor progress and address any issues that arise.

- **Provide Additional Support**: When needed, researchers can provide technical support through sponsored research agreements to help the licensee achieve commercialization milestones.

- **Evaluate Compliance to License Terms**: UR Ventures periodically evaluates the licensee's performance against the agreed milestones and financial targets and addresses any deviations or concerns promptly.

By following these steps, the University can effectively market its patents, find suitable licensees, and ensure their innovations reach the market, generating revenue and fostering further research and development.

Role of the Inventor in the Commercialization Process

The inventor's active involvement can dramatically improve the chances of matching an invention to an outside company. Their research and consulting relationships are often helpful in both identifying potential licensees and technology champions within companies. Once interested companies are identified, the inventor is the best person to describe the details of the invention and its technical advantages. The most successful tech transfer results are obtained when the inventor and the licensing professional work together as a team to market and promote the use of the technology.

Additionally, many licensees require the active assistance of the inventor to facilitate their commercialization efforts. This can take the form of infrequent informal contacts, consulting relationships, or more formal Sponsored Research Agreements.

Rather than license an invention to an established company, an inventor(s) can choose to "spin out" a startup venture from the University as a distinct approach to commercializing their inventions. This path offers greater autonomy and control over the development, marketing, and strategic direction of the technology, but unsurprisingly requires significantly more time and commitment from the inventor(s). The inventor's participation with a startup is guided by UR Conflict of Interest policies (see page 45 for more information). For more guidance on starting a venture based on University technology, see our separate University Startup Ventures guide.

Frequently Asked Questions (FAQs)

How does UR Ventures market your inventions?
Technology Licensing Specialists use many sources and strategies to identify potential licensees and to market inventions. Sometimes existing relationships of the inventors, UR Ventures, and other researchers are useful in marketing an invention. Market research can also assist in identifying prospective licensees. In addition, we also examine other complementary technologies and agreements to assist our efforts. Faculty publications and presentations are often excellent marketing tools as well.

How long does it take to find a potential licensee?
There are many variables that affect how long it takes to find a potential licensee including, for example, the attractiveness of the invention and the size and stage of the development of the market. Often, especially at universities, the invention is “ahead of its time” and it could therefore be 5 to 10 years until a use or need is identified.

Can there be more than one licensee?
Yes, an invention can be licensed to multiple licensees, either non-exclusively to several companies or exclusively to several companies, each for a unique field-of-use (application) or geography.

Will UR Ventures initiate or continue patenting activity without an identified licensee?
Yes, in most cases the decision to file a patent has to be made before a technology is ready to be licensed. As stated earlier, it can sometimes take many years to find a licensee and it may be necessary to maintain patent rights or potential patent rights until a market for the technology to develop or for a licensee to be found. UR Ventures periodically reviews all issued and pending patents and their potential for licensing, and in some cases decisions are made to discontinue patent applications or not pay issued patent maintenance fees.

CHAPTER 7 License Agreements

Introduction

Once an invention has been evaluated and protected and a licensee has been identified, the next step of the tech transfer process is the license agreement. In this agreement, the licensor (University of Rochester) grants rights to the licensee (an established company or university spin-out) to develop, manufacture, and sell the invention. This section outlines the roles and responsibilities of licensors and licensees, the key components of license agreements, and the benefits of these partnerships in achieving commercial success. Structuring a comprehensive and clear license agreement is essential for protecting the interests of both parties and ensuring a successful commercial relationship. In this chapter we outline the different types of license agreements, as well as the structure and key terms of a license agreement.

Types of License Agreements

- **Exclusive License**: An exclusive license grants one licensee sole rights to use, manufacture, and market the licensed invention or technology. This arrangement typically includes specific terms regarding the field of use and geographic territory, ensuring that no other licensee or the licensor itself can exploit the invention in the same manner during the license period. Exclusive licenses often appeal to licensees seeking a competitive advantage and greater control over commercialization efforts.

- **Nonexclusive License**: In contrast, a nonexclusive license allows the licensor to grant similar rights to multiple licensees. This type of arrangement permits broader distribution and use of the invention across different markets or applications, without restricting the licensor's ability to enter into additional licensing agreements with other parties. Nonexclusive licenses are beneficial for encouraging widespread adoption of technologies and maximizing the reach of innovations in diverse industries or regions.

Key Components in a License Agreement

1 Grant Clause

- Describes the scope of the license, including the specific rights being granted (e.g., to make, use, sell, distribute, and sublicense).
- Clarifies any limitations, such as specific fields of use or territories (geographic area) where the licensee can operate.

2 Exclusivity

- Specifies whether the license is exclusive (only one licensee) or non-exclusive (multiple licensees).
- Outlines any conditions that must be met to maintain exclusivity.

3 Financial Obligations

- Upfront Fees: Initial payment made by the licensee upon signing the agreement.
- Milestone Payments: Payments made when specific development or commercialization milestones are achieved.
- Royalties: Ongoing payments based on sales or usage; typically a percentage of net sales.
- Minimum Annual Payments: A component of a licensee's obligation in some cases.
- Patent Expense Reimbursement: For exclusive licenses, licensee is responsible for all patent expenses, past and future, associated with the licensed technology.
- Sublicense Payments: Payments arising from revenue generated from sublicenses granted by the licensee to third parties.

4 Diligence Requirements

- Obligates the licensee to use reasonable efforts to develop and commercialize the licensed technology.
- Describes the required diligence and efforts by the licensee to bring the product to market.
- May include specific performance milestones and deadlines for development activities.

5 Intellectual Property Rights

- Details how the licensed patents and related IP will be managed, prosecuted, maintained, and enforced.
- Addresses who is responsible for patent prosecution and who will bear the costs.
- Details how infringement claims will be handled and who will bear the associated costs.

6 Confidentiality

- Establishes confidentiality obligations for both parties regarding sensitive information and trade secrets disclosed during the course of the agreement.
- Specifies what information is considered confidential and the duration of confidentiality obligations, both during and after the term of the agreement.

7 Reporting and Audit Rights

- Requires the licensee to provide regular reports on activities such as sales, sublicensing, and development progress.
- Mandates record-keeping practices and grants the licensor the right to audit the licensee's records to ensure compliance with financial and reporting obligations.

8 Indemnification

- Requires the licensee to indemnify the licensor against any claims or damages arising from the use of the licensed technology.
- Protects the licensor from legal liabilities related to the licensee's activities.

9 Termination Provisions

- Outlines the circumstances under which the agreement can be terminated by either party, such as for breach of contract, bankruptcy, or mutual agreement.
- Describes the rights and obligations of both parties upon termination, including the return or destruction of confidential information and cessation of use of the licensed IP.

10 **Dispute Resolution**

- Establishes the method for resolving disputes, such as arbitration or mediation.
- Specifies the governing law and jurisdiction for any legal proceedings.

By carefully structuring the license agreement and including these key terms, both licensors and licensees can ensure a well-defined, mutually beneficial arrangement that protects their interests and facilitates the successful commercialization of the patented invention.

Frequently Asked Questions (FAQs)

How is a company chosen to be a licensee?
A licensee is chosen based on its interest, ability, resources, and commitment to commercialize the technology for the benefit of the general public.

What can I expect to gain if my invention is licensed?
Per University of Rochester's IP Policy, a share of any financial return from a license is provided to the inventor(s). For more information, please refer to the revenue section on pages 40-41. In addition, inventors enjoy the satisfaction of knowing their inventions are being deployed for the benefit of the general public. New and enhanced relationships with businesses are another outcome that can augment teaching, research, and consulting.

What is the relationship between an inventor and a licensee, and how much of my time will it require?
Many licensees require the active assistance of the inventor to facilitate their commercialization efforts. This can take the form of infrequent informal contacts, consulting relationships, or more formal Sponsored Research Agreements. Working with a new business startup can require substantially more time, depending on your role in or with the company and your continuing role within UR. Your participation with a startup is guided by UR conflict of interest policies (see page 45 for more information).

What other types of agreements and considerations apply to tech transfer?
Refer to Chapter 3, pages 13-18 for an overview of other agreement types used at universities.

What activities occur during commercialization?
Most licensees continue to develop an invention to enhance the technology, reduce risk, prove reliability, and satisfy the market requirements for adoption by customers. This can involve additional testing, prototyping for manufacturability, durability and integrity, and further development to improve performance and other characteristics. Documentation for training, installation and marketing is often created during this phase. Benchmarking tests are often required to demonstrate the product/service advantages and to position the product in the market.

What is my role as inventor during commercialization?
Your role can vary depending on your interest and involvement, in the interest of the licensee in utilizing your services for various assignments, and any contractual obligations related to the license or any personal agreements. For more guidance on starting a venture based on University technology, see our separate Startup Guide.

CHAPTER 8 Revenue Distribution

Introduction

This section summarizes the allocation of income generated from the commercialization of your invention, including the shares allotted to inventors, the University, and any associated departments, as described in the University's IP Policy. By outlining the revenue distribution process, we ensure transparency and fair compensation for all parties involved.

Revenue Distribution Process

1. **Gross Revenue**: This is the total revenue received from the licensee, which includes upfront fees, milestone payments, royalties based on sales, and any other payments specified in the licensing agreement.

2. **Deduction of Costs**: Legal expenses incurred by the University in commercializing the technology being licensed are deducted prior to distribution.

3. **Net Revenue**: The remaining amount after deducting legal costs is considered the net revenue.

4. **Distribution to Inventors**: Inventors typically receive a percentage of net revenue following a specific schedule set forth in the University's IP Policy (see Table 1). For purposes of revenue distribution from licensed patents, "inventors" are named inventors on patents. For authors of copyrighted materials, "inventors" include the authors but can also include non-author members of the development team.

5 **University Allocation:**

- **Departments**: The department of each inventor's primary appointment receives a share to be used at their discretion.
- **School or College**: The school or college of each inventor's primary appointment receives a share to be used at their discretion.
- **IP Pool**: The IP Pool is used for funding patent applications, for marketing, and for expenses associated with technology development and licensing.

1st cumulative $50,000	**% of Net Revenue**
Inventors	50.0%
Department	20.0%
School or College	10.0%
IP Pool	20.0%
$50,001 to $250,000	**% of Net Revenue**
Inventors	40.0%
Department	20.0%
School or College	15.0%
IP Pool	25.0%
$250,001 and above	**% of Net Revenue**
Inventors	35.0%
Department	20.0%
School or College	20.0%
IP Pool	25.0%

Table 1. A summary of how net revenue is shared among different groups at UR at different tiers of net revenue. Note - this distribution table only applies to intellectual property disclosed on or after February 1, 1997.
For more information, refer to the UR IP Policy

Frequently Asked Questions (FAQs)

What revenues are generated for UR Ventures if commercialization is successful?
Most licenses have licensing fees that can be very modest (for startups or situations in which the value of the license is deemed to warrant a modest license fee) or can reach hundreds of thousands of dollars or more. Royalties on the sales of the licensed products can generate revenues, although this can take years to occur. Equity, if included in a license, can lead to a financial upside, but only if a successful equity liquidation event (public equity offering or a sale of the company) occurs. Most licenses do not yield substantial revenues. A recent study of licenses at US universities demonstrated that less than 1% of all licenses yield over $1 million in revenue to the University. However, the rewards of an invention reaching the market are often more significant than the financial considerations alone.

What are the tax implications of any revenues I receive from UR?
License revenues are typically taxed as Form 1099 income. Consult a tax advisor for specific advice.

How are licensing revenues distributed if there are multiple inventors and/or multiple inventions on a license?
The "inventor's share" of licensing revenue is split equally among the total number of issued or pending patents in the licensed portfolio at the time the revenue was received and in the country in which the revenue was generated. If the revenue generated is for the portfolio as a whole, e.g. the license issue fee or a milestone payment, then the revenue is split equally between all issued or pending patents in the licensed portfolio, regardless of country.

What is the policy when the University receives equity from a licensee?
UR may accept equity in a company as partial consideration for technology licensing-related transactions in appropriate circumstances pursuant to the following provisions (See Section 6.2.5 of UR IP Policy):

- When the company selected to develop, market, and deliver the technology to the marketplace is not reasonably able to provide adequate compensation for licensing in cash, the University may choose to accept equity in that company, partially in lieu of cash, to facilitate the practical application of a University technology for the general public benefit.

- University acceptance of equity in consideration of licensing a University technology shall be based upon the principles of openness, objectivity and fairness in decision-making, and preeminence of the education, research and public service missions of the University over financial or individual personal gain.

- The University may retain the right to designate a representative to the board of directors of a licensee in which it holds equity.

- The terms of a technology licensing-related transaction, other than those related to the acceptance of equity in the company by the University, shall be consistent with University transactions for comparable technologies.

- University investigators may perform clinical trials or other comparable licensed-product development or testing for companies in which the University or faculty member holds equity as part of the technology licensing-related transaction only upon the specific approval of an independent University review committee or other body authorized by the Provost and/or the Sr. VP of Research to assess any real or perceived organizational conflict of interest in the performance of such trials or research activities. The review committee may typically consist of Deans and Associate Deans for Research and Graduate Studies, and will also strive to protect the interests of graduate students participating in such research studies.

- When the University accepts equity in a company as partial consideration for a technology licensing-related transaction, the University, taking into account any legal restrictions, shall:

    - Arrange for the inventor(s) to receive his or her share of equity directly from the company upon execution of the relevant agreement; or

    - Take all equity, including the inventor(s)' share, in the name of the University of Rochester; in which case the Senior Vice President for Institutional Resources will make decisions regarding equity disposition based upon sound business judgment and publicly available information, and will coordinate with the appropriate University officials if necessary; the inventor(s)' sole right being the receipt of the appropriate share of such equity or its cash equivalent at such time and in such form as the Senior Vice President for Institutional Resources shall deem appropriate.

- The University shall determine the inventor(s)' share of equity in lieu of cash in consideration for a technology licensing-related transaction consistent with formulas established in Section 6.2.4.

What will happen to my invention if the licensee is unsuccessful in commercializing the technology? Can the invention be licensed to another entity?

Licenses typically include performance milestones that, if unmet, can result in termination of the license. This allows for subsequent licensing to another company. However, time delays and other considerations can hinder re-licensing.

CHAPTER 9 Managing Conflict of Interest

UR Conflict of Interest Policy

Outside financial interests are common and often unavoidable in a modern research university. They can arise from the fact that one mission of the University is to promote the public good by fostering the transfer of knowledge gained through University research and scholarship to the broader world, which includes the private sector. Two important means of accomplishing this mission are faculty consulting and the commercialization of technologies derived from faculty research.

It is appropriate that faculty be compensated for their participation in these activities through consulting fees and sharing in royalties and other financial benefits resulting from the commercialization of their work. It is not appropriate, however, for an individual's professional objectivity to be affected by considerations of personal financial gain.

- UR Conflict of Interest Policy and Procedures can be found here.
- UR Policy on Faculty Conflict of Commitment and Interest can be found here.

Conflict of Interest

A conflict of interest occurs when there is a divergence between an individual's private interests and his or her professional obligations to the University and its constituents. The conflict may be either actual or apparent. Apparent conflicts of interest arise in circumstances in which an independent observer might reasonably question whether the individual's professional objectivity may be affected by considerations of financial gain.

The goal of the Conflict of Interest policy is to avoid or to manage situations that call into question the credibility and objectivity of an investigator or the University's research and findings. An additional goal is to promote the best interest of students and others whose work depends on faculty direction. The University is an institution of trust; faculty must respect this principle and conduct their affairs in ways that do not compromise the integrity of the University. In addition, the University recognizes that even the perception that faculty have financial interests in the outcome of their research can call in to question the credibility and objectivity of the research.

Faculty members should conduct their affairs to avoid or minimize conflicts of interest and must respond appropriately when actual or apparent conflicts of interest arise. To that end, this policy informs faculty about situations that generate conflicts of interest related to research, provides mechanisms for faculty and the University to manage those conflicts of interest that arise, and describes situations that are prohibited. Every faculty member has an obligation to become familiar with, and abide by, the provisions of this policy.

Financial Interest

"Financial Interest" means anything of monetary value received or held by a faculty member, non-faculty investigator or such an individual's family member, whether or not the value is readily ascertainable, including, but not limited to: salary or other payments for services (e.g., consulting fees, honoraria, or paid authorships other than scholarly works); any equity interests (e.g., stocks, stock options or other ownership interests); and intellectual property rights and interests (e.g., patents, trademarks, servicemarks, and copyrights), upon receipt of royalties or other income related to such intellectual property rights and interests

"Financial Interest" does NOT include:

- Salary, royalties, or other remuneration that are paid by the University of Rochester;

- Income from the authorship of academic or scholarly works;

- Income from seminars, lectures, or teaching engagements sponsored by, or advisory committees or review panels for, Federal, state or local governmental agencies, US institutions of higher education, research institutes affiliated with institutions of higher education, and academic teaching hospitals and medical centers; or

- Equity interests or income from investment vehicles, such as mutual funds and retirement accounts, so long as the Investigator does not directly control the investment decisions made in these vehicles.

"Significant Financial Interest" means a Financial Interest that reasonably appears to be related to the Investigator's Institutional Responsibilities, and:

- if with a publicly traded entity, the aggregate value of any salary or other payments for services received during the 12 month period preceding the disclosure, and the value of any equity interest during the 12 month period preceding or as of the date of disclosure, exceeds $5,000; or

- if with a non-publicly traded entity, the aggregate value of any salary or other payments for services received during the 12 month period preceding the disclosure exceeds $5,000; or

- if with a non-publicly-traded company, is an equity interest of any value during the 12 month period preceding or as of the date of disclosure; or

- is income related to intellectual property rights and interests not paid by the University of Rochester.

Disclosing Financial Conflicts of Interest

All Faculty members with paid academic, clinical or research appointments, all paid non-faculty Investigators, and all others designated by the Dean, are required to disclose their outside financial interests to the University on an annual and an ad hoc basis, as described in detail in the UR Policy on Faculty Conflict of Commitment and Interest.

Each Dean must ensure compliance with this policy, and is responsible for 100% compliance with the disclosure process, as well as review of annual and ad hoc disclosures for their school. Schools must use either written forms or develop secure web-based disclosure systems. All disclosure form templates, whether web-based or written, must be submitted to and approved by the Provost prior to implementation. The COI Committee may request, at any time, a review of those forms and processes.

Regardless of the disclosure requirements, an individual, in his or her own best interest, is encouraged to disclose any other financial or related interest that could present an actual conflict of interest or be perceived to present a conflict of interest. Disclosure is a key factor in protecting one's reputation and career from potentially embarrassing or harmful allegations of inappropriate behavior. Faculty members are encouraged to ask for guidance from their department chair or Dean or the Provost's Office even in situations that are not covered by the disclosure procedures in this policy.

Frequently Asked Questions

Can University resources be used for outside consulting activities or other non-University purposes?
No. Faculty may not use University resources, including facilities, personnel, equipment, confidential information, or the University's name, logo, servicemark, or trademarks, as part of their outside consulting activities or for any other non-University purposes. Faculty must report on a timely basis the creation or discovery of all potentially patentable inventions created or discovered as a result of substantial use of University resources.

What constitutes a Financial Conflict of Interest?
"Financial Conflict of Interest" means a Financial Interest or Significant Financial Interest that the University reasonably determines could directly and significantly affect the design, conduct, or reporting of University research.

What is a Conflict of Commitment?
A conflict of commitment exists when a faculty member's outside activities (e.g., consulting, pro bono or public service work) interfere with his or her ability to meet the research, educational, service, and administrative responsibilities of his or her faculty appointment. Conflicts of commitment are to be avoided because they violate the principle that faculty are paid by the University to fulfill their University commitments, detract from the educational and research process, and may generate disputes between faculty and the University over intellectual property ownership. Specific activities that require explicit prior written approval of the department chair and Dean include, but are not limited to, serving as a PI on behalf of another institution or entity; serving in a significant managerial role of an external entity, whether for-profit or not-for-profit; and assuming a board position in a for-profit company.

How are Conflicts of Interest related to clinical trials managed?
Clinical trials involve particularly sensitive issues if the investigator has a financial interest related to the clinical trial. Accordingly, all financial interests related to clinical trials that are disclosed to the Dean will be reviewed to determine whether they constitute financial conflicts of interest. More information can be found in the UR Policy on Faculty Conflict of Commitment and Interest.

Where should I seek guidance on conflict of interest or commitment?
If a situation raising questions of conflict of interest or commitment arises, a faculty member should discuss the situation with his or her department chair and school Dean.

CHAPTER 10 Resources for University Innovators

Internal Funding Sources

There are a variety of internal funding opportunities offered at the University of Rochester. A comprehensive list of internal funding programs of AS&E, the Office of the Provost, URMC, and other sources is available on the AS&E Intranet: University of Rochester Internal Funding Compendium.

The University of Rochester offers the following sources of funding for Arts, Sciences and Engineering research projects:

- **Pump Primer** - PumpPrimer I and II are internal funding programs for researchers in Arts, Science & Engineering (AS&E). These funds are intended to launch pilot project for initiatives otherwise difficult to execute. Projects that are advanced through Pump Primer funding are expected to be submitted for external funding within 18 months of the conclusion of Pump Primer projects.

    - **PumpPrimer I** - To remain consistent with federal agency award mechanisms that bring together experts with complementary skills to address grand challenges, we encourage large-scale initiatives that are multi-and inter-disciplinary. These projects impact AS&E faculty, increase the quality and stability of our research infrastructure, and increase our national and international visibility.

    - **PumpPrimer II (PPII)** - The increasingly competitive environment for extramural funding increases the need for proof of concept and/or pilot data. To help faculty secure funding for bold new research directions, the Dean's Office will provide a maximum of $50,000 for up to one year. Cost-sharing with departmental resources is encouraged.

  Applicants for both mechanisms are expected to submit a proposal for external funding within 18 months of the allocation of intramural PumpPrimer support. Both mechanisms will require a brief final survey to help evaluate the effectiveness of this program.

Contact Information:

Faculty in Arts and Sciences:

- Lindsey Harrington | lindsey.harrington@rochester.edu
- Hilary Mosher | hilary.mosher@rochester.edu
- Charles Bush | charles.bush@rochester.edu

Faculty in Engineering:

- Cindy Gary | cindy.gary@rochester.edu

- **Center of Excellence in Data Science (CoE) Request for Proposals (RFP**) – CoE program is open to Principal Investigators (PIs) from the faculties of New York State Universities. Persons eligible to be PI's must be full-time faculty or hold a similar position in their university. Note that the CoE does not award funds directly to companies. The projects should be data science driven. The Center's goal is to stimulate economic growth in NY State by promoting technology transfer from our universities to companies operating in NY. Accordingly, proposed projects must involve a NY industry partner that is actively engaged with the project, providing assessment of economic impact of the project, and possibly financially co-sponsoring the research (although this is not a requirement).

  - **Deadline**: Typically spring/fall

  - **Funding**: Equipment purchased is considered the property of the CoE. F&A on the awarded funds is restricted to 15% on payroll expenses (salary and benefits) only. CoE awards are capped at $60,000 per proposal.

  - **Proposal Submission**: All proposals must be submitted by email as attachments using the forms on the CoE website.

  - **Contact Information**: Margaret Urzetta | margaret.urzetta@rochester.edu

- **Goergen Institute for Data Science (GIDS) Seed Funding Program** – GIDS seed funding program aims to support collaborative research efforts toward attracting major external funding, with a particular focus on work aligned with at least one of the following research priorities in data science:

    - Foundations of machine learning and artificial intelligence (AI)
    - Imaging, optics, and computer/human vision
    - Life sciences and biomedical data science
    - Health analytics and digital health
    - Human-data-system interfaces (including human-computer interaction, augmented and virtual reality (AR/VR), robotics)
    - AI-augmented learning and work

    The PI or at least one of the co-PIs (may have up to 3) must be a GIDS affiliated faculty member. There are no limits on the number of proposals per faculty member.

    - **Deadline**: Typically June each year

    - **Funding**: Maximum budget for the GIDS seed grants is $30,000

    - **Additional Information**: Can be found on the GIDS research funding page.

- **Center for Emerging and Innovative Sciences (CEIS) Collaborative Innovative Research (CIR) Request for Proposals (RFP)** – CEIS is one of 15 Centers for Advanced Technology funded by NYSTAR. The CIR program provides matching funds to a principal investigator (PI) for company-sponsored research on campus. The size of the award can be up to $30,000 (subject to availability of funds) and requires at least a 2:1 match by the company. A typical project runs one year with the opportunity for renewed extension and is intended to support a research project on campus with a dedicated graduate student. Proposals will be reviewed in June, for projects to commence on July 1, subject to the availability of funds.

The goal of the CEIS CIR program is to stimulate economic growth in NY State by promoting technology transfer from our universities to New York companies. Proposed projects must involve a NY industry partner that is actively engaged with the research, financially sponsoring the research, and willing to provide ongoing economic impact reporting for the project.

The CIR program is open to Principal Investigators (PIs) from the faculties of the University of Rochester. Persons eligible to be PI's must be full-time faculty or hold a similar position in their university. Note that only university PIs are eligible for CIR funding. CEIS does not award funds directly to companies.

Types of projects considered: Types of projects considered: CEIS support traditionally spans a broad range of optics, photonics and imaging interests, including ophthalmic and vision science, fiber optic communications, biomedical imaging, geospatial imaging, precision optics, consumer imaging and displays. Proposals in other technical areas will be considered as well.

  - **Deadline**: Mid-May annually

  - **Funding**: CEIS awards are capped at $30,000 per proposal, $45,000 per faculty researcher, and $80,000 per company partner. Awards will be granted for one year only. F&A on the CEIS awarded funds is restricted to 15% on payroll expenses (salary and benefits) only and may be allowed at a reduced rate of 25% of payroll expenses only on the company matching funds with Dean's Office approval.

  - **Additional Information**: CIR program page for more information.

  - **Contact Information**: Cathy Adams | cathy.adams@rochester.edu

- **UR Ventures Technology Development Fund (TDF)** - The TDF supports University researchers who wish to further the process of translating their research into commercial opportunities. Awards can range from $40,000 to $100,000.

- **World Universities Network** - This annual competitive fund is aimed at bringing together researchers to undertake innovative, high-quality, sustainable research that addresses global challenges. Each member institution is permitted to lead two proposals per year but can collaborate on as many as desired.

    - **Deadline**: Internal applications are due in summer.

    - **Contact Information**: Megan Bennett-Spears | megan.bennett-spears@rochester.edu

    - **Additional Information:** View the guidelines on the Global website.

- **University Research Award** - The principal aim of the University Research Award (URA) program is to provide seed money to enable the development of new, innovative research projects with a high probability of attracting external support in the short term. Proposals that seek to establish or further develop new collaborations and multidisciplinary research teams will be favorably received. Recipients of a URA are expected to show that they have applied for external funding within 18 months of the end of their URA project period. The URA program is primarily meant to further stimulate the research of faculty who have moved beyond research support provided by the University as part of their initial start-up period. Faculty who still hold such funds are eligible to apply, but an explanation as to the unique necessity for additional funds (e.g., why their existing funds are insufficient for the new project) should be provided.

- **Furth Fund** - The Furth Fund provides early career scientists with up to $12,500 in research funds. These funds are used to promote the research activities of the faculty member, which may include the purchase of new equipment or support for graduate students or postdocs. The Furth Fund may not be used as a source of salary support for the faculty member.
    - Nominees should be tenure-track junior faculty appointed in natural and biological science or engineering departments within the School of Arts, Sciences & Engineering, the School of Medicine and Dentistry, and the School of Nursing who have been hired within the past three academic years. Preference will be given to nominees who wish to use the award to support the active engagement of graduate students or postdocs in their research.
    - Nominations for tenure-track candidates being actively recruited for positions, but not yet hired, will also be accepted. Departments must have made an offer to the candidate before the nomination will be considered. The nomination materials should note the status of recruitment efforts and the anticipated date of the candidate's decision.
    - The VP for research will solicit nominations from the deans. All nominations must include the nominee's curriculum vitae and a short (1-2 page) letter from the departmental chair describing the nominee's research activities and proposed use of the funds, along with and an endorsement from the dean of the school. There is no limit to the number of nominations per school.

- **Pilot Grant Program in Aging Research** - Pilot funds are offered by the Rochester Aging Research (RoAR) Center. Pilot Grant Program in Aging Research will support innovative projects in basic, applied, and clinical aging research. Request for proposals are typically announced in fall.

- **Environmental Health Services** - The Environmental Health Sciences Center (EHSC) supports a limited number of meritorious Pilot Projects to advance new translational environmental health sciences research. These funds are intended to provide a means for investigators to obtain preliminary data for extramural grant applications, develop new innovative research initiatives, access novel technologies, and address community concerns or needs. The Pilot Project Program works in conjunction with EHSC Integrated Health Sciences Facility, Biostatistics, and Community Engagement Cores and Career Development Program.

- **UR Environmental Health Sciences Center (EHSC) and Institute for Human Health and the Environment (IHHE) Internal Pilot Funding**

    - **Research Catalyst Funds** - intended to provide seed funding to obtain preliminary data for extramural grant submissions and/or to help develop new research directions. Research Catalyst Funds are solicited twice a year (Fall and Spring) and up to $50,000 can be requested. Application required a one-page preliminary application.

        - Research Catalyst Funds Application
        - Research Catalyst Funds Request For Application

    - **Mini Pilot Projects** - intended for two purposes:

        - **Rapid Response**
            - Rapid response refers to a time-sensitive, short-term need for funds to obtain or analyze data (e.g., to address reviewer comments for grant application, to respond to an unexpected or unique environmental event)

        - **Pipeline-to-Pilot Projects**
            - Pipeline-to-Pilot refers to funding for a new line of investigation that has a very solid rationale but no or very limited preliminary data.

      Applications for Mini Pilot Projects are accepted on a rolling basis to meet time-sensitive, small-scale needs. Up to $8,000 can be requested.

      See Mini Pilot Project Application to aid in preparing the application.

- **Internal Humanities Fellowship** - The Internal Humanities Fellowships are available to tenure-track assistant professors in any field of humanistic study, including anthropology, art and art history, English, history, modern languages and cultures, music, philosophy, or religion and classics. In addition to presenting their own research, the in-residence fellows participate in the bi-weekly Humanities Center seminar and other workshops, conferences, and programs. Deadline: winter

- **Wadsworth C. Sykes Faculty Engineering Award** – This program funds faculty member projects in the Hajim School of Engineering and Applied Sciences for the development of an innovative curricular course or program for engineering students, with particular emphasis on the first and second year student programs.

  Proposal should describe the educational outcomes for the proposed program and include an assessment plan for these educational objectives. Note, the assessment plan should include factors other than student grades. If the program replaces an existing course or program, the educational outcomes should be compared. The proposal must address program sustainability. A short summary report is due upon completion of the award. Proposals should be written in 11 pt. font and are not to exceed three pages in length. Please include a one paragraph summary abstract of your proposal. Program budgets will not fund overhead charges, faculty effort or summer compensation.

  Proposals may be submitted online. Submit a proposal to the Hajim Dean's Office with details on program content, budget and budget justifications, and the benefit for Hajim School students.

  - **Deadline**: Spring and fall each year.

  - **Funding**: Multiple awards for use in and academic year ranging from $2,500 to $30,000.

  - **Contact Information**: Tim Woodward | tim.woodward@rochester.edu or Paul Funkenbusch | paul.funkenbusch@rochester.edu

Other University Resources

- UR Center for Health + Technology (CHeT)- provides expertise in clinical trials, clinical materials, outcome measures, data modeling & predictive analysis

- UR Clinical & Translational Science Institute (CTSI) - helps translational scientists and researchers and their teams produce results faster through robust services and support, funding, education programs, and collaborative opportunities

- UR Office of Research + Project Administration (ORPA) - office that serves and guides UR and URMC community on all aspects of sponsored programs administration

- UR Health Lab- facilitates collaboration between UR and external companies to provide early access to healthcare technologies for testing and validation

- Ain Center for Entrepreneurship and Innovation – The Ain Center for Entrepreneurship and Innovation sparks the entrepreneurial spirit by empowering students to uncover opportunities, push boundaries, and turn visionary ideas into reality. Our dynamic ecosystem of collaboration, creativity, and hands-on experience equips students with the mindset and skills to transform ambition into innovation.

- NSF I-Corps - NSF I-Corps Regional Courses are for university-based STEM researchers and early-stage startup founders who are interested in exploring the market potential of their work and learning entrepreneurial skills. Participants learn to apply "customer discovery" methodology to evaluate the potential for translating their technology innovation from the lab into a successful product and/or service. UR is part of the Interior Northeast I-Corps Hub.

- NextCorps – UR-affiliated non-profit organization based in downtown Rochester that is dedicated to helping innovative technology companies launch and grow
  - Incubation- resources and support for early-stage entrepreneurs
  - Embark- software education
  - Luminate- accelerator for optics-, photonics-, and imaging-enabled technology
  - Venture for ClimateTech – accelerator for climate tech innovators
  - Scale for ClimateTech – manufacturing support for climate tech
  - Manufacturing Accelerator – accelerator for hardware startups

- Empire Discovery Institute – New York state supported accelerator dedicated to drug discovery and development in upstate NY, formed as equal partnership between UB, UR, and Roswell Park

- Excell Partners - Excell is a venture capital fund that invests in Seed and Early Stage high-tech startups in New York State focused on Upstate NY. Excell is an affiliate of the University of Rochester. Excell has the dual mission of generating returns that rank in the top-quartile of its benchmarks and supporting regional economic development by providing entrepreneurs with hands-on support as well as investment capital. Excell's portfolio includes investments in Medical Devices, Materials, Energy, Biotech, Agtech, Imaging, and IT/Software ventures across New York State.

Intellectual Property

- Process for obtaining a Utility Patent (graphic)- USPTO
- Introduction to Patent Protection- Video from USPTO
- Inventorship - Presentation by Cynthia Zhang, UR Ventures
- Intellectual Property: Patents - Video from Kauffman Founders School
- The standard for inventorship is more stringent than for authorship – and matters. - Article from Mintz Insights
- IP Strategy for Biotechs - Article from Excedr
- An IP guide to winning investors for biotech start-ups – Article from Managing IP
- Biotechnology Law: A Primer for Scientists – Book by Alan Morrison
- Google Patents
- U.S. Patent and Trademark Office (USPTO); USPTO Patent Search
- World Intellectual Property Organization (WIPO)
- European Patent Office (EPO)

Copyright

- U.S. Copyright Office
- What is Copyright? - Video from the U.S. Copyright Office

Technology Transfer and Licensing

- What is Technology Transfer? - Video from AUTM
- What is Patent Licensing? - Article from Excedr
- Intellectual Property: Licensing - Video from Kauffman Founders School
- Association of University Technology Managers (AUTM)
- Model Legal Agreements - National Venture Capital Association (NVCA)
- US-BOLT Life Science Sample License Agreement - From NVCA
- US-BOLT Life Science Sample Term Sheet - From NVCA