

**Office of the Chancellor
Pennsylvania's State System of Higher Education
Procedures and Standards for University Operations**

**Procedure/Standard Number 2018-37
Technology Transfer and Commercialization Services**

Approved by:  **Date:** 7-25-18
Chancellor

History: Catalogs the 2010 Technology Transfer and Commercialization Guideline
Tech Transfer P/S Work Group – January, 2018
University Open Comment – April 2018
APSCUF – June 2018

Revised:

Additional History:

Related Policies, Procedures or Standards:

Key Words/Categories: Research, Intellectual Property, Inventions

Additional References: *Bayh-Dole Act of 1980, P.L. 96-517, as amended by P.L. 98-620, implemented by regulations published at 37 CFR Part 401; Collective Bargaining Agreement between APSCUF and State System, Article 39.*

I. Purpose and Scope

The purpose of this Procedure/Standard is to outline processes and services by which System universities may provide Technology Transfer and Commercialization services to faculty, other employees, students and guest researchers when the opportunity is available.

The goals of this Procedure/Standard is to provide operational guidelines that help universities pursue four goals:

1. Assist University personnel in the commercialization of their inventions.
2. Make inventions and technology resulting from the efforts of university personnel available to industry and the public on an effective and nondiscriminatory basis.
3. Obtain revenue for University personnel who invent and for the System universities, for use in furthering their educational and research goals.
4. Define the rights and responsibilities of all parties involved in development of Technology Transfer and Commercialization at State System universities.

The guidelines were prepared in accordance with provisions pertaining to Intellectual Property in Article 39 of the Collective Bargaining Agreement (CBA) between The

Association of Pennsylvania State College and University Faculties (APSCUF) and Pennsylvania's State System of Higher Education (State System) that governs faculty work. The guidelines are intended to provide guidance to implement the CBA, the Bayh-Dole Act which applies to federally sponsored research, and relevant Patent, Trademark and Copyright laws.

II. Definitions

A. **Technology Transfer and Commercialization**—is the process of legally protecting new technology invented by university faculty and others through their research efforts, and making that technology available for public use through licensing to third parties for manufacture, production, distribution and sales.

1. University Personnel

- Paid or otherwise compensated undergraduate and graduate students.
- Part-time and full-time faculty, staff and administrators, and others with a defined relation to the university.
- Contract employees, contractors and consultants.
- Guest researchers, including retired faculty, and researcher collaborators from other institutions and companies, utilizing university research facilities or equipment (but excluding those who execute a facility-use agreement which compensates the university.)

III. Service Delivery

System universities have, at this time, two options for providing technology transfer and commercialization services. The options are as follows:

Option 1. Utilizing networked services comprised of a) the staff of the Office of the Chancellor, or other designated office, b) a designated third party provider¹ (“agent”) and c) patent counsel recommended by the agent and subcontracted through the System’s contracted intellectual property counsel; or

Option 2. Utilizing a) internal university staff and office(s) and b) patent counsel contracted by the System Chief Counsel.

Under either option, the University/Office of the Chancellor will follow the published *Inventor’s Guide to Technology Transfer and Commercialization* (“Guide”) in the provision of services. The Guide offers standards for compliance with the faculty CBA, the federal Bayh-Dole Act and with federal patent requirements. Except when required by law or contract, universities that employ service delivery option 2 above may modify operating procedures contained in the Guide. However, the Guide reflects lessons learned over several years of actual practice and reflects the current standard of service. Consultation with the Chancellor’s Office and patent counsel is encouraged prior to such modifications.

Under either service delivery model the Chancellor’s Office and University Legal Counsel will provide document templates for specific transactions upon request.

¹ As of the date of this document, the third-party provider is the Penn State Research Foundation (PSRF)

In the event of a conflict between the Inventor's Guide, Sponsor Agreements and the APSCUF CBA, the order of control is as follows: first – Sponsor Agreements including federal sponsors, second – APSCUF CBA, third – the published Inventor's Guide, fourth – university specific practices. When evaluating its ownership the university/State System, in accordance with APSCUF CBA Article 39. D.2., will notify ASPCUF of the identity of faculty inventors.

Inasmuch as a program to enhance stewardship of university inventions and protection activities has to adapt to changing laws, court rulings and regulations, the Guide may be subject to ongoing review and modification.

IV. **Implementation:** Immediately

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Inventor's Guide
to Technology Transfer and Commercialization
in Pennsylvania's State System of Higher Education

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Part 2. EMPLOYEES, CONTRACTORS AND GUEST RESEARCHERS

Part 3. STUDENTS

The “Technology Transfer and Research Commercialization Network” was first established in 2009 as a partnership of System universities, Office of the Chancellor, and Penn State Research Foundation (PSRF). The partnership provides the services of Technology Licensing Officers, docket clerks, and specialized patent counsel of PSRF to System universities at a very reasonable, pay-as-you-go cost. The Office of the Chancellor is the System’s coordination point between the universities and PSRF, and vice versa. Universities may utilize their own staff in lieu of PSRF services, but regardless of which service model is deployed at any individual System university, the inventor’s first point of contact is a key administrator within their university.

The goal of Technology Transfer and Commercialization is to achieve protection of new technology (through patenting) and facilitate availability of the technology to industry and the public either through licensing with existing ventures or facilitating start-up ventures.

The first few pages of this guide contain a broad overview of the technology transfer process and services available to researchers. More details are provided in later sections.

The content of this Inventor’s Guide was previously published in the “Technology Transfer & Commercialization Guide for Pennsylvania’s State System Faculty”, released October 28, 2010, the “Technology Transfer and Commercialization Student Guide”, October 2009; and the “Technology Transfer and Commercialization Non-Faculty Guide”, October 2009.

Part 1 of the Inventors’ Guide covers faculty and is in accordance with provisions pertaining to Intellectual Property in Article 39 of the Collective Bargaining Agreement (CBA) between The Association of Pennsylvania State College and university Faculties (APSCUF) and Pennsylvania’s State System of Higher Education (State System) that governs faculty work. This document is intended to provide guidance to implement that Article of the CBA. Citations to the CBA are footnoted when appropriate.

Part 2 of the Guide covers employees, contractors and guest researchers. Part 3 covers students’ academic work that results in intellectual property, including inventions and other products.

This Inventor’s Guide is based upon Stanford University’s “Inventor’s Guide” with adaptations for the State System. We are very grateful to Katharine Ku, Executive Director, and the staff of Stanford’s Office of Technology Licensing, for permission to use their materials.

Part 1. FACULTY

Overview

WHAT IS TECHNOLOGY TRANSFER?

For the purpose of this Guide, Technology Transfer (commonly known as “tech transfer”) is the movement of new or improved technology (i.e. inventions) from the System universities to third-parties (e.g. private companies) with the interest, ability and resources to commercialize the technology thus achieving a public benefit such as new or improved products or manufacturing equipment, medical treatments and more.

In a university setting, technology transfer occurs in many ways: through research publications, scientific conferences and relationships with industry. It also occurs via educated students entering the workforce. In this broad sense, System universities and faculty engage in technology transfer every day.

WHAT IS INTELLECTUAL PROPERTY?

Legally, intellectual property is a creation of the mind that is protectable under U.S. patent, copyright, trademark, or trade secret laws. It encompasses inventions; musical, literary, and artistic works; symbols, names, images, and designs used in commerce.

According to the faculty (APSCUF) CBA, Intellectual Property “includes any invention, whether patentable or not, material, data, software, information, works, whether copyrightable or not, subject matter, any trademarks, trade secrets, creations, publications, compositions, discoveries, inventions, improvements, developments and all other results of works performed by the faculty/creator during the course of his/her employment with the System/university, as well as all intellectual property therein, including patents, trademarks and copyright registrations and trade protections.”¹

An invention is a specific type of intellectual property; it is the physical embodiment of a discovery. For an invention to qualify for a U.S. patent it must be novel, non-obvious, and useful. It can be: a device, a manufacturable article, a machine, a composition of matter, a process or method, or a new, useful improvement.

This Guide will provide guidance primarily on the technology transfer of inventions that can and should be protected under U.S. patents laws.

HOW IS TECHNOLOGY “TRANSFERRED”?

A License Agreement is the most common method of transferring technology to a third party for development, production and sale. A License Agreement will cover a specific period of years, a particular field of use, and geographic area. It typically contains performance milestones and negotiated licensing fees payable to the university and the inventors.

WHAT IS THE ROLE OF THE PENN STATE RESEARCH FOUNDATION (PSRF) IN THE TECHNOLOGY TRANSFER PROCESS?

Under a renewable Memorandum of Understanding with the State System, PSRF acts as an agent for State System universities and provides experienced staff, for example, Technology Licensing Officers, a Docket Clerk, etc., who do the following:

¹ APSCUF CBA, Article 39, C.1.

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- evaluate inventions presented to it by System universities
- recommend a protection strategy for inventions
- recommend patent counsel for the university/inventor to consider
- advise the university on patent prosecutions decisions
- market inventions to industry with the hope of finding one or more companies interested in developing products based upon the technology
- negotiates confidentiality agreements and/or license agreements with interested companies
- maintains long-term relationships with the companies that have signed licensed agreements and are developing products.

System universities also have the option of using a) internal staff and offices and b) patent counsel contracted by the System's Chief Counsel in lieu of the agent PSRF to perform the above services. As of this date, most System universities utilize the PSRF option. Contact your university Sponsored Research Office to learn which option your university is currently utilizing.

WHAT IS THE ROLE OF THE OFFICE OF THE CHANCELLOR?

The Office of the Chancellor provides a designated staff person who serves as a single point of contact for coordination of System universities with the agent, PSRF. This System Coordinator ensures that Invention Disclosures submitted by inventors (after approval by their university) are complete, ensures that the university is fully informed of progress and involved in decisions on the patent process as they may be undertaken by the agent.

WHAT IS THE ROLE OF MY UNIVERSITY?

The university assesses your invention, based upon your disclosure and makes several preliminary determinations:

- 1) does it have an investment in the research (e.g. Substantial Use² per the CBA Article 39 or Federal funds)?
- 2) does it have responsibilities to a research sponsor?
- 3) is it willing to invest in protecting the invention in return for ownership rights?

Based on this information, the university makes a decision on sending the Invention Disclosure to the agent PSRF or proceeding with internal staff. After PSRF's or university staff's initial evaluation and recommendation, the university has to decide if it can commit funding for the future costs and accept assignment of title from the inventors. As the patent process continues, there are frequent decisions points when the university may reassess the likelihood of successful patent prosecution or commercialization.

WHAT IS MY ROLE AS AN INVENTOR?

Tell your university about your invention. Complete and submit the Invention Disclosure, which is available on-line. In order to preserve your patent rights, we strongly encourage you to disclose your invention *before* publicly describing your invention in a presentation, lecture, poster, abstract, website, research proposals, thesis, publication or other public presentation of the technology. It's also very important that you maintain laboratory notebooks, or other appropriate records, that document the conception and reduction to practice of an invention. The Invention Disclosure form is available at www.passshe.edu/techtransfer.

Help prepare marketing materials and identify potential licensees. When completing the Invention Disclosure, include companies and contacts you believe might be interested in your invention. Your past professional contacts can be extremely useful. You will have input on the creation of any non-confidential marketing materials that are publicly posted and shared with prospects. In addition, inventors must often respond to technical questions from interested companies.

Respond to requests from your university, PSRF and patent counsel. If the university decides to pursue patent protection for the invention, you will need to review the patent application for completeness and accuracy prior to

² APSCUF CBA, Article 39, C.4.a. and b.

filing. When the initial patent application is filed, you will be asked to sign an assignment agreement that is submitted to the U.S. Patent and Trademark Office. The patent counsel will also need your input when responding to the Patent Office as the prosecution continues.

Keep your university and your Technology Licensing Officer informed. Let us know about significant technology development, upcoming publications and interactions with companies related to your invention.

HOW LONG DOES THE TECHNOLOGY TRANSFER PROCESS TAKE?

The process of receiving a patent and finding the right licensing partner may take many years. The time depends on many variables including the development stage of the technology, market conditions, production costs, and competing technologies. Early stage technology which is common in university research may not attract licensees due to the need for more research and development and many unknown factors.

HOW CAN I PUBLISH THE RESULTS OF MY RESEARCH AND STILL PROTECT THE COMMERCIAL VALUE OF MY DISCOVERY OR INVENTION?

Patent rights are affected by publication and presentations (including thesis and thesis defense) by the sharing of “enabling information” to others in the discipline. Therefore, keep your university well informed of upcoming public disclosures and publication desires. The best way to keep the university informed is to submit a confidential Invention Disclosure well before any public communication or disclosure of the invention. The Invention Disclosure will identify for the university any upcoming publication/presentation deadlines, as well as past publications/presentations.

Once publicly disclosed (i.e. published or presented in some form), an invention may have restricted potential for patent protection in many other countries. While the U.S. allows a nominal one-year grace period after a public disclosure to file a patent, the first-inventor-to-file the patent receives priority as inventor. So, your public disclosure could potentially be co-opted by another researcher/inventor.

WHAT IS THE BAYH-DOLE ACT?

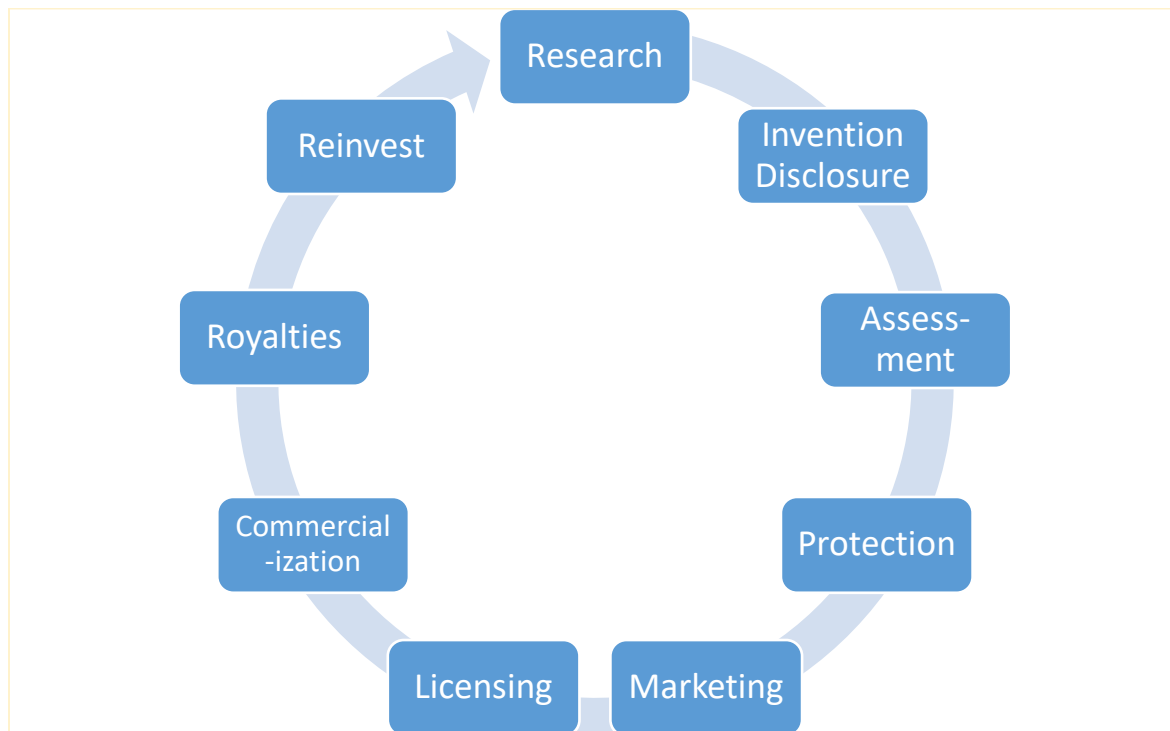
The U.S. Bayh-Dole Act of 1980 allows universities and other non-profit institutions to have ownership rights to discoveries resulting from federally funded research, providing certain obligations are met. Those obligations include making efforts to protect and commercialize the discoveries, submitting progress reports to the funding agency, giving preference in licensing to small business that demonstrate sufficient capability, and sharing any resulting royalties with the inventors. For more information go to the “Bayh-Dole Act”.

HOW CAN I FIND OUT THE STATUS OF MY INVENTION?

Your university representative will keep you informed and involved in all developments on your inventions. U.S. Patent and Trademark Office actions and work products of the patent attorney will be shared with you. Occasionally significant time passes without any developments.

The Technology Transfer Process at a Glance

The technology transfer process can be conceptualized as a continuous cycle in which licensed products in the marketplace help fund future research and innovation. This chapter gives an overview of each phase in the cycle. As the following chapters explain each phase in more detail, refer to the footer on the bottom of each page to follow the process.



1. RESEARCH

Observations and experiments during research activities often lead to discoveries and inventions. An invention is any useful process, machine, composition of matter (e.g., a chemical or biological compound), or any new or useful improvement of the same. Often, multiple researchers – including trainees and research staff – may have contributed to an invention and may be inventors. All research personnel, excluding clerical and non-technical staff, sign the appropriate Cooperation Agreement or Intellectual Property agreement prior to the start of the research. The Cooperation Agreement addresses your future assignment of patent rights to the university, when a patent application is actually filed, in exchange for the university funding the costs of filing the patent. However, if the research is federally funded, the Cooperation Agreement will include an actual assignment of ownership rights as required by the Bayh-Dole Act effective in 2018.

2. INVENTION AND INVENTION DISCLOSURE

This written notice of invention to your university (i.e. the Sponsored Research Office or the Provosts Office) begins the formal technology transfer process. The Invention Disclosure is a confidential document, and among other things, should fully describe the new aspects of your invention. It should include the critical solution it provides and its advantages and benefits over current technologies. The form is available at www.passhe.edu/techtransfer.

3. ASSESSMENT

The university will review the Invention Disclosure, and make an initial decision (or not) to invest its resources in protecting the invention. If utilizing the agent PSRF, it will forward the Disclosure and Cooperation Agreement to the Office of the Chancellor, where the System's Coordinator makes a further review for completeness and for potential

obstacles. Thereafter the disclosure is forwarded to PSRF who will assess “prior art” i.e. existing patents, recommend patent counsel, conduct patent searches (if applicable), and analyze the market and competitive technologies to assess the invention’s commercialization potential. If not utilizing the services of the agent PSRF, the university completes this assessment with its own staff and/or approved patent counsel. The assessment process will provide feedback for the licensing strategy, such as whether the invention is ready for market or requires more development and to license exclusively or non-exclusively.

4. INTELLECTUAL PROPERTY PROTECTION

Patent protection is a common legal protection method for inventions, and if it is appropriate, necessary and warranted, it begins with the filing of a patent application with the U.S. Patent and Trademark Office and, when appropriate, foreign patent offices. At the time the patent application is filed, you will also assign patent rights to the university. Then it will require several years and tens of thousands of dollars to obtain an issued patent. There may be a fair amount of financial risk, since there is no guarantee of obtaining patent claims. Other commonly used forms of intellectual property protection include copyright and trademark. Unique biological materials and software can often be successfully licensed without formal intellectual property protection.

5. MARKETING

The System is committed to broadly marketing all technologies to appropriate companies that could be interested in commercializing the particular invention. With your input PSRF or university staff will create a marketing overview of the technology, and identify and contact candidate companies (potential licensees) that have the expertise, resources, and business networks to bring the technology to market.

6. SELECTING THE BEST LICENSEE(S)

If there are several parties interested in a license, the university will endeavor to license non-exclusively or grant field-of-use licenses, if possible. If it is not possible to accommodate all interested parties, the University will license to the company most committed and able to bring the technology to the marketplace. Typically, there is only one interested party or none at all.

7. LICENSING

PSRF or university staff negotiate and execute a license agreement. This agreement is a contract between the university and a company in which certain university rights to a technology are granted to the company in return for financial and other benefits. An option agreement is sometimes used to allow a company to evaluate the technology for a limited time before a formal license agreement is concluded.

8. COMMERCIALIZATION

Most university inventions are at a very early stage and require further research and development efforts. The licensee company typically makes significant business investments of time and funding to commercialize the product or service. This step may entail regulatory approvals, sales and marketing, development, support, training, and other activities.

9. ROYALTIES

Royalties received by the university from licensees are distributed to inventors according to policy and, for faculty inventors, the APSCUF CBA³. The portion retained by the university is reinvested to fund additional research and education. Royalties are typically paid in annual or semi-annual cash payments by licensees according to the terms of the License Agreement.

10. REINVEST

³ APSCUF CBA, Article 39, D.1.

Royalties retained by the Universities support future research and education, as required by the Bayh-Dole Act, and collectively foster the creation of the next generation of research and innovators.

WHO OWNS MY INVENTIONS?

The standards for ownership of inventions made by employees, contractors and guest researchers vary significantly from the following discussion of faculty created inventions. If you fall in one of these classes, please review Part 2.

Under U.S. law, inventors own their inventions. However, the requirements of sponsored research agreements, the APSCUF CBA, and the federal Bayh-Dole Act can have various impacts on invention or patent ownership in different scenarios. In addition, if you use the technology transfer services, you will be asked to assign your patent rights to your university, which does not affect your standing as inventor, or your right to royalties. It does provide the university with control over patent protection costs and processes.

When faculty research uses university “resources/support/facilities”, including sponsor funds, to an extent that meets the CBA definition of “Substantial Use”⁴, the university retains a right “to evaluate its ownership interests”⁵ in inventions that were created solely or jointly by its faculty⁶.

However, all inventions developed as part of, or a continuation of, federally-funded research will be owned by the university, in accordance with the Bayh-Dole Act. If the university does not exercise its right to ownership, the federal government retains sole ownership. As May 14, 2018, all researchers of federally sponsored research, excluding clerical and non-technical staff, must sign an agreement that assigns ownership to the university prior to the start of research. The State System’s Cooperation Agreement accomplishes this requirement. However assigning ownership does not change the inventor’s standing as inventors or their rights to their share of future licensing revenue.

A non-federal sponsor may contract with the university for research that uses university resources/ support/facilities and/or faculty services in which the ownership of any resulting invention is established in the research agreement and varies from the CBA terms. However, in the absence of terms in non-federal research agreements, the ownership of inventions developed by faculty will be determined by the terms of the CBA.⁷

If you are a faculty member, you have sole ownership rights to any inventions you create without federal support and without Substantial Use⁸ of university resources (including sponsor funds which the university administers) and when the non-federal sponsor’s agreement permits it. However, inventions which you may have sole ownership do not include inventions that are based upon or derived from intellectual property that the university owns or to which it has a potential ownership claim, such as an invention that is derivative of intellectual property developed with federal funds or with “Substantial Use”.

It is university policy to seek assignment of title, after a review of the invention and discussion with faculty, for inventions that have arisen from federally sponsored research and for those that arise from research that has received Substantial Use of university resources/support/facilities. Substantial Use includes sponsor support that the university and or its affiliates received and administered with or without a written agreement. So that the university may evaluate its obligations, investment and the commercial potential of the invention it will work with you (and APSCUF) and with technology licensing agents and legal counsel.⁹

WHAT IS ‘SUBSTANTIAL USE’?

‘Substantial Use’ of institutional resources is a term that is defined in the APSCUF CBA that only applies to faculty of State System Universities. The term has no relevance to other employees, students or non-employees. It means that for the project that produced the intellectual property the faculty member/creator received staff, salary or material

⁴ APSCUF CBA, Art. 39, C.4

⁵ APSCUF CBA, Art. 39, D.2.

⁶ APSCUF CBA, Art. 39, C.4.

⁷ APSCUF CBA, Art. 39, B.7.

⁸ APSCUF CBA, Art. 39.B.1. and B.2.

⁹ APSCUF CBA, Art. 39 D.2.

support beyond that normally provided to the creator (i.e. faculty) at the university. The definition of Substantial Use in the APSCUF CBA Article 39 is as follows:

“Use of university resources/support/facilities will be considered substantial if the use of such resources/support/facilities is important to the creation of Intellectual Property and the university aid exceeds a cumulative total of \$40,000 per project, for any combination of the items listed below over a three-year period. Examples of such support items include but are not limited to the direct and indirect costs associated with the following:

- *Alternate assignment, and/or special assignment for a specific project or task.*
- *Use of university funds designated for a specific project or task.*
- *Use of university-owned, administered, leased equipment, facilities, materials or technological information.¹⁰*
- *Support provided by other public or private organizations when it is arranged, administered, or controlled by the university.*
- *Assistance of one or more university employees or students, or others who are assigned to the project or task.*
- *Cash investments or cash purchases.*

Examples of such support do not include the following:

- *Mere incidental use of university resources/support/facilities.*
- *Normal academic use of facilities commonly available to faculty members, staff, or the public, such as libraries, offices, office equipment, or internet services.*
- *Use of university sabbatical leave unless there was substantial use of university resources/support/facilities as defined above.*

WHO CONFIRMS THAT UNIVERSITY SUPPORT MEETS THE THRESHOLD OF “SUBSTANTIAL USE”?

For non-federally funded research confirmation of Substantial Use is a responsibility shared by the faculty inventor and the university in the following manner:

1) When filing an Invention Disclosure you report all use of university facilities, labs, equipment, paid student workers, cash investments or cash purchases, and amount and source of funds used to support the research leading to the invention. You need not disclose normal academic use of facilities commonly available to faculty members, staff or the public, such as libraries, offices, office equipment or internet services. You do report all support provided by other public or private organizations (“sponsors”), when it is arranged, administered, or controlled by the university or its affiliates. This includes such support whether or not there is a written agreement with the organization. If you do not know the exact cost of specific items, provide all the information you do have.

(2) The university’s finance/accounting office, or other designated office, confirms the inventor’s report and establishes a mechanism to track the institutional support (cash and in-kind contributions, grants and contracts) attributable to the relevant research that led to the development of the technology, including but not limited to direct and indirect costs of release time, replacement faculty costs, employees, graduate assistants, other student workers, travel funds, supplies, stipends, use of labs and specialized equipment (when lab or equipment use exceeds incidental use). Many of the research costs are typically budgeted at the proposal stage of a sponsored research project and actual expenses are then available to the university’s grant office and fiscal office. The university designates staff responsible for this function. The university’s confirmed amount of support will be provided to you to review and discuss.

A dispute regarding whether the use of university resources/support/facilities is “Substantial Use”¹¹ is subject to the dispute resolution and grievance provisions of the APSCUF CBA.

¹⁰ When appropriate and cost effective, Universities may use or establish methods of allocating such costs according to general accounting principles.

¹¹ APSCUF CBA, Art. 39,E

WHAT IS 'ASSIGNMENT'?

An Assignment is a short legal agreement between the university and individual faculty, staff or student inventor(s) or developer(s) which gives the university the title, ownership and rights to the patent that protects a faculty or employee's invention. An Assignment of the title of a patent to the university provides legal status for the university to file the patent with the U.S. Patent and Trademark Office (USPTO) and engage patent counsel to prosecute the patent. Moreover the university needs an Assignment to justify the investment of university funds in the costs of prosecuting the patent. There are additional legal advantages when there are multiple inventors. If it did not require an Assignment, the university would put tens of thousands of dollars at risk, perhaps losing opportunities to recoup any part of its investment from future licensing revenues. In most cases (except federally funded research) the Cooperation Agreement does NOT contain an Assignment provision.

A detailed Assignment is prepared by the Patent Counsel in a form acceptable to the USPTO and is signed at the time of the provisional application filing. An Assignment has no effect whatsoever on the inventor's standing as inventor. In fact, all inventors are named on the patent recorded with the USPTO.

HOW CAN AN INVENTOR BENEFIT FROM ASSIGNING OWNERSHIP TO THE UNIVERSITY?

It is only when you assign ownership to the university, that it can take steps to file for patent protection of the invention, paying all the filing and legal costs of doing so. Initial legal costs can range from \$8,000 to \$15,000. Total costs can range up to \$25,000 for a patent filed in the United States. The university has access to attorneys who specialize in patent law. The university can also provide the services of experienced staff or the agent PSRF Technology Licensing Officers who assess the invention for its commercial potential, and seek out businesses, both regionally and nationally, that may buy licenses to use the invention, thus generating income for both the inventor and the university. The university can take future legal action to ensure no one uses the patented invention without permission and otherwise protects the value of the invention. Patents require payment of annual maintenance fees, which the university will assume. The Technology Licensing Officers monitor all licensing agreements to ensure license fee payments are consistent with agreements and actual product sales or profitability. License Agreements signed by the university will typically allow access to examine the licensee's financial records to ensure the product's sales and profitability are properly represented to the university and the inventor.

After assignment, you can remain an active participant in commercialization efforts, as the Technology Licensing Officers will follow-up on all leads you provide. It is possible that you can do additional research for the licensees under sponsored research agreements.

In summary, you can only realize income from your invention if it is properly protected through the filing and issuance of a patent, *and* if it is successfully marketed to business. All revenues from successful licensing arrangements are shared between you and the university. See the table in the Royalty Distributions section of this Guide for more information the net income distribution. These services are provided by the university at no direct cost to you when the invention is assigned to the university.

WHAT IF THERE IS NO UNIVERSITY OR SPONSOR SUPPORT?

If you create an invention wholly on your own time, and without the use of sponsor funds or university support, it will belong to you. An individual's "own time" means time other than that devoted to normal and assigned functions in teaching, university service, direction and conduct of research on university premises and utilizing university facilities. The term "university facilities" includes any facility available to the inventor as a direct result of the inventor's affiliation with the System university, or any facility available under the university's policies on co-operative use of research equipment, or policy on use of facilities by emerging technology enterprises, and which would not otherwise be available to a non-System affiliated individual. However, inventions created on one's "own time" without use of "university resources" does not include inventions that are based upon or derived from intellectual property that the university owns or to which it has a potential ownership claim.

In situations of your sole ownership, you may voluntarily transfer ownership of any patentable process, device, invention and related copyrightable materials to the university in order to access the protection, licensing and

commercialization services outlined herein. In the case of voluntary transfer, the university will provide revenue sharing for the inventor according to policy, to take advantage of this option, you start by filing a Disclosure with your Sponsored Research office or Provost's office.

A summary of the circumstances surrounding the development of an invention, the related ownership structures and the resulting revenue sharing is illustrated in the Royalty Distributions section of this Guide.

HOW DOES THE UNIVERSITY DECIDE TO ACCEPT VOLUNTARY ASSIGNMENTS OF MY TECHNOLOGY?

The university considers the opportunities and costs associated with protecting and commercializing the invention as part of any decision to accept a voluntary transfer. There is no obligation on the part of the university to accept voluntary transfer of ownership ("assignment") of a faculty member's invention.

WHO OWNS RIGHTS TO DISCOVERIES MADE WHILE I AM CONSULTING?

If your consulting contract is administered by the university and or its affiliates, the ownership issues are discussed above as sponsored research.

Since System Universities do not ordinarily review faculty members' private consulting arrangements, you should be clear about the delineation between university work and private consulting. You cannot enter into a private agreement that creates copyright or patent obligations that conflict with your duties under the APSCUF CBA and sponsor agreements¹².

Private consulting contracts sometimes contain provisions that limit the disposition of research results, including intellectual property, in promising research areas. Again, university faculty have the duty to ensure that the assignment of rights to intellectual property evolving from consulting activities does not conflict with the actual or potential ownership rights of the university. In general, university faculty may, within the scope of a private consulting agreement, assign rights to intellectual property when organizations engaging their services have legitimate prior claims to the development(s) in question. Examples include consulting activity that leads to the refinement of an existing product or process, or to a development for which background patents or prior art claims exist and are held by the consulting client.

When a faculty member is consulting for a start-up company in which he or she, or an immediate family member, has a financial interest, it is particularly important to make certain that the separation between the faculty member's academic program, including research and teaching activities, is clear to all parties. This standard applies during sabbatical leave. When a question arises as to the appropriate delineation between a researcher's university responsibilities and a researcher's consulting obligation, the researcher should discuss the situation with his or her Dean/Provost and/or Office of Sponsored Research. If there is a question of ownership, the intellectual property should be disclosed to the university and a determination of ownership rights will be made. (Please review the Conflict of Interest section for more information on this topic.)

WHO OWNS DISCOVERIES MADE WHILE I AM ON SABBATICAL?

In most cases you own your inventions made during sabbatical, because sabbatical leave is specifically excluded from "Substantial Use". However, if there is other, additional use of university resources/support/facilities, such as use of labs and equipment, or research funds, that equal or exceed Substantial Use, then the university has a claim on ownership. If you wish assistance in protecting and commercializing your inventions made wholly on your own time and without use of any university support or facilities, the services of the university and the agent, PSRF, may be available to you. To take advantage of this option, you start by filing a Disclosure with your Sponsored Research office or Provost's office.

SHOULD I LIST VISITING SCIENTISTS OR PEERS FROM OTHER UNIVERSITIES ON MY DISCLOSURE?

¹² APSCUF CBA, Article 39, D.7.

All contributors to the ideas leading to a discovery should be listed as inventors in your disclosure, even if they are not System employees or students.

CAN A STUDENT CONTRIBUTE TO AN INVENTION?

Yes, students are often inventors. Did they contribute to conception or development of the invention? If so they may be an inventor. When a student serves only as “helping hands” carrying out your instructions, the student does not qualify as an inventor.

The ownership of an invention solely developed by a student depends on 1) whether the invention was created by a student in a capacity as a university employee or 2) whether the invention was created using university resources. The university owns any intellectual property created by student employees in the course of their employment. Part 2 of the Guide covers student employees and Part 3 covers students’ academic work.

IF THE UNIVERSITY HAS NO CLAIMS ON MY INVENTION CAN I STILL RECEIVE UNIVERSITY STAFF OR FINANCIAL ASSISTANCE IN COMMERCIALIZING IT?

Yes, if you voluntarily assign patent rights to the university.

The university does not assert any ownership rights to faculty-created inventions that do not make substantial use of university resources/support/facilities and are not subject to federal or non-federal sponsor restrictions. (The scope of university ownership of inventions created by employees, contractors and some guest researchers varies from this standard. Please see Part 2.)

However, if you are a faculty inventor in this situation and wish to make use of the technology transfer and commercialization services of the university, you may voluntarily disclose and assign your rights in ownership to the university. Prior to accepting assignment, and committing to fund the costs of protection and marketing, the university will evaluate the invention for its stage of development and its commercial potential. If the university chooses to move forward with commercialization of the invention, the university will accept assignment and share any realized net revenue with the inventors.

Research Considerations

MAY I USE MATERIAL FROM OTHERS IN MY RESEARCH?

Yes, if the other party is willing to share materials. It is important to carefully document from whom and under what conditions you obtained materials so that the university can determine if your use may impact the ownership rights of a subsequent invention or technology. If you wish to obtain materials from outside sources, an incoming Material Transfer Agreement (MTA) may be required. You may be able to forego the use of MTAs in basic research by agreeing to publicly acknowledge colleagues for materials they have provided in papers and presentations. When doing developmental or transformational research, MTAs are useful to help protect intellectual property rights of the material creator and your own inventions and new technology. For more information on MTAs, consult your university Sponsored Research Office or the State System's Technology Transfer web page: www.passhe.edu/techtransfer.

WILL I BE ABLE TO SHARE MATERIAL, RESEARCH TOOLS, OR INTELLECTUAL PROPERTY WITH OTHERS TO FURTHER THEIR RESEARCH?

Yes, within the United States. U.S. Export Control laws and/or Sanctions may affect transfer of materials to collaborators in other countries. Foreign import laws may also govern the shipment of biological, botanical, or chemical materials. Please check with your Sponsored Research or Provost's Office when you have material to share with colleagues that are off campus.

WHAT RIGHTS DOES A CORPORATE RESEARCH SPONSOR HAVE TO ANY DISCOVERIES ASSOCIATED WITH MY RESEARCH?

The Sponsored Research Agreement with a corporate sponsor will usually contain provisions pertaining to intellectual property. The university typically negotiates to own the patent rights and other intellectual property resulting from corporate sponsored research that you undertake. Often, corporate sponsored research contracts provide the sponsor a limited time to negotiate a license for any patent or intellectual property rights developed under the specific scope of work that the sponsor funded. The sponsor generally will not have contractual rights to discoveries that are clearly outside of the scope of the research. Therefore, it is important to define the scope of work within a research agreement.

As the contractor for the specified research, the university must ensure that it has not committed rights to technologies to multiple sponsors. In dealing with potential industrial sponsors, please be sensitive to this possibility. The consequences of commingling intellectual property rights can be substantial.

In industry-sponsored as well as collaborative academic research, you may be one of several researchers, including industry employees, sharing research responsibilities. In the event of discovery of a new technology, i.e. an invention, each party to the agreement may have a share of ownership, depending on the terms of the sponsorship agreement.

Background intellectual property belongs to the researcher/institution/company that created the intellectual property prior to the joint effort. Others cannot lay claim to it. Jointly owned intellectual property is typically the research that arises from the joint research effort. Sponsorship agreements must address both background intellectual property and jointly developed intellectual property, including disclosure of all jointly developed intellectual property to all parties to the agreement.

Corporate sponsored research agreements, collaborations, MTAs, etc. are handled by the university Sponsored Research office which works closely with University Legal Counsel and the System Office regarding intellectual property issues in these agreements.

WHAT ABOUT SHARING MATERIAL AND INFORMATION WHEN DOING INDIVIDUAL CONSULTING?

Faculty who enter into private consulting agreements are expected to ensure that the terms of the consulting arrangement are consistent with university and System policies, including those related to intellectual property ownership and employment responsibilities. When doing private consulting, System inventors must take care to not share material that the university owns, or may potentially own, or has licensed to another entity.

WHAT IS AN INVENTION AND TECHNOLOGY DISCLOSURE?

An Invention Disclosure is a written description of your invention or development that you provide to the university. The Disclosure lists all sources of support and includes information necessary to begin pursuing protection and commercialization activities. In order to keep all options open for pursuing patent rights, it is very important to disclose inventions prior to publication. It is also critical that you note the date of any previous or upcoming publication or other public disclosure describing the invention. Another critical point is to list all inventors on the Disclosure.

To initiate the process, use the forms available at www.passhe.edu/techtransfer and submit the Disclosure and the Faculty Co-operation Agreement to the university Sponsored Research office or Provost's Office. (Other employees submit an Intellectual Property Agreement). These documents will be treated as confidential.

WHEN SHOULD I INITIALLY INFORM THE UNIVERSITY ABOUT MY RESEARCH?

The quick answer is as soon as possible.

If you envision the possibility of creating potentially patentable Intellectual Property through your research endeavors, inform university administrators of the possibility at the outset of the research, or as soon as this possibility is apparent. There are several notification methods you can use. There is normally a statement or check box on this subject on the university proposal routing form for sponsored research proposals. For non-sponsored research, you should inform your Provost or Sponsored Research office by phone or email.

There are advantages to you of an advance notice to university administrators. By giving them a general awareness of your research, they can advise you of potential pitfalls that would disqualify the technology from patent protections. They can provide advice on the tech transfer process and how it may relate to your research. Finally, it fulfills your obligations under the APSCUF CBA and sponsor agreements.

WHEN DO I SIGN THE "TECHNOLOGY TRANSFER AND COOPERATION AGREEMENT" OR THE "INTELLECTUAL PROPERTY AGREEMENT"?

These agreements apply to researchers where inventions are expected or foreseeable. The agreements are to be signed at the start of any research in the sciences and technology. The appropriate agreement should be signed by university faculty and other research personnel at the time of award of any sponsored research, including internally sponsored research, or at the time of initiation of any research which potentially and foreseeably utilizes Substantial Use of university resources/support/facilities. Faculty sign the Cooperation Agreement. Non-faculty employees, compensated students, guest researchers involved in the research, excluding clerical and non-technical staff, sign the Intellectual Property Agreement. See Part 2 and Part 3 for additional guidance on non-faculty personnel.

WHEN SHOULD I COMPLETE AN INVENTION AND TECHNOLOGY DISCLOSURE?

You should complete an Invention and Technology Disclosure whenever you feel you have discovered something unique with possible commercial value or when the terms of your sponsored research require disclosure of inventions. Ideally, this should be done well before presenting the discovery through publications, poster sessions, conferences, press releases, or other communications. Once the essence of an invention is publicly disclosed (i.e., published or presented in some written form to an external audience), the potential patent rights may be limited. Be sure to inform your university of any imminent or prior presentation, lecture, poster, abstract, website description, research proposal, dissertation/master's thesis, publication, or other public presentation of the invention. Embargoing a thesis does not protect the technology from public disclosure.

There are some requirements arising from the faculty CBA and federal law that pertain to Disclosures. University faculty must disclose promptly to the university's Sponsored Research office or Provost's Office inventions

developed: a) with university resources (facilities, funds, or equipment) - examples of items are provided under the definition of Substantial Use of Institutional Resources in the CBA¹³; or b) within the fields of expertise and/or within the scope of employment for which they are retained by the university, including inventions made on your own time. It is a matter of law in federally-sponsored research. The obligation to disclose also is implicit in the APSCUF CBA as the university has the right to “evaluate its ownership”¹⁴. This evaluation could result in confirmation that the university has no claims on or interest in your invention.

WHAT SHOULD I DISCLOSE?

In practice, all inventions, regardless of sponsorship, have to be disclosed to ensure proper determination of ownership, and protection of the intellectual property. When in doubt confer with your university Provost or Sponsored Research Office.

Items **not** requiring disclosure include intellectual property that is one of the following types, used or created for instructional purposes or as a result of scholarly activities, as stated in the faculty CBA: (a) publications, (b) textbooks, (c) educational courseware, (d) lectures, (e) recordings [video or audio], (f) original works of art, (g) fiction, including popular fiction, novels, poems, dramatic works, (h) motion pictures and other similar audio-visual works, (i) musical compositions, or, (j) computer software.¹⁵ In practice these works cannot be protected by patent and have limited tech transfer potential.

There could be exceptions to the above list of exclusions. A sponsor agreement with specific terms governing the ownership of resultant intellectual property, may require disclosure.¹⁶ Also, any of the above items that are works made for hire for the university will be owned as governed by an agreement between faculty and the university and, typically, it will belong to the university.¹⁷ If you desire to commercialize your software or app, then the Technology Transfer services may be available to you, depending on the university’s review of the costs and opportunities of doing so. In this last case you voluntarily disclose your software or app to the university.

HOW DO I KNOW IF MY DISCOVERY IS 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 market potential. Review the information on what makes an invention patentable. If you are in doubt, please discuss your work with the university Sponsored Research office or Provost’s Office.

¹³ APSCUF CBA Art. 39, C.4

¹⁴ APSCUF CBA Art. 39, D.2.

¹⁵ APSCUF CBA Art. 39, B.2.

¹⁶ APSCUF CBA Art. 39, B.7

¹⁷ APSCUF CBA Art. 39, B.9

WHAT HAPPENS AFTER I FILE THE INVENTION DISCLOSURE?

The following process is essentially the same if a System university elects to provide services with its own staff instead of utilizing the centralized services of the System's agent, PSRF. However, the text often refers to PSRF because most System universities are using its services. A University that does not use PSRF establishes its own internal procedures that accomplish the objectives or process described below.

When using the services of PSRF, your university officials will forward the Invention Disclosure (and the Cooperation Agreement) to the Office of the Chancellor which sponsors a System-wide, central clearinghouse for PSRF that serves all State System Universities, staffed by a System Coordinator. The university ensures that you have provided a complete and accurate record of invention, and that you have signed the Technology Transfer and Co-operation Agreement. Thereafter, the following course of events ensues.

The System Coordinator reviews the Disclosure for obvious issues (e.g. published, public information) and for potential complexities such as co-inventors from other institutions or sponsorship restrictions. Then the System Coordinator confirms university funding for the upcoming professional and legal fees and if it agrees, forwards the Disclosure to Penn State Research Foundation.

A Technology Licensing Officer at the agent, PSRF, is appointed to work with the inventor and the invention. Appointment usually occurs within 2-3 weeks after submitting the Invention Disclosure. Staff or the Technology Licensing Officer may contact the inventor or principal inventor for an initial discussion.

The Technology Licensing Officer (or university staff) assesses the invention to determine possible commercial or protection strategies. However, not every invention lends itself to patenting or other protection; the invention may be marketable as know-how or a trade secret. Patentable inventions are unique, non-obvious, and useful in that they fulfill a genuine market need. If the university continues to assess the Disclosure for patentability and potential university ownership, it will notify APSCUF of the identity of all faculty inventors.

A preliminary patent search is often performed by external patent counsel in order to identify "prior art", i.e. existing patents covering the same or similar technology. A "patentability opinion" also may be requested from the same patent counsel, who typically specializes in the appropriate technical area, to verify the invention is novel, non-obvious, and useful, all legal requirements of a patentable invention.

If patent protection is deemed appropriate, a provisional application is generally filed. A provisional application is not a full patent application and is not examined by the USPTO. It provides a one-year period in which to file a full patent application, and it establishes a priority date for the invention. The university uses provisional patent applications to protect inventions that are to be subsequently publicly disclosed as a conference talk or in an academic paper. The Inventor will work with selected legal counsel who drafts the provisional patent application.

Knowing when to file the provisional application is an important matter that depends on the stage of research. The university may decide to delay filing until you have more data or proof of concept and/or a prototype. As stated above, the provisional filing date kicks-off a one year period to refine the research and find a licensee prior to coming up against the deadline to file the nonprovisional, which must make a strong presentation of the invention. The filing date of the nonprovisional starts the 20 year life of the patent, should it be approved by the U.S. Patent and Trademark Office. These are two reasons the university does not want to file too soon. On rare occasions the university may choose to skip the provisional step, but making this determination requires a very high degree of faith in the research findings and the market demand, which is usually difficult to measure at this early stage.

The year between the provisional filing and full patent filing is the opportunity for the inventor and the Technology Licensing Officer to further advance the invention by securing additional funding, developing the technology, performing market analyses, and/or contacting commercial entities interested in the invention for further commercial development. Non-enabling disclosures are sent to these companies to inform them of the general nature of the invention, without divulging its essential elements. Upon the expressed interest of a potential licensee, the execution of an appropriate Confidentiality Agreement allows detailed information about the invention to be released to the potential licensee. This one-year window is crucial for positioning the invention for patenting; it should be a collaborative effort between the inventor and the Technology Licensing Officer.

Before the full, nonprovisional patent application is filed (at the end of one year) the university reviews progress on the development of the invention and progress on locating a licensee, to inform a decision to file a full patent application. The university's Sponsored Research Director or the Provost is usually part of this decision as is the Technology Licensing Officer and the System's Coordinator. The review results in a yes/no recommendation for continued patent protection. If patent protection is deemed appropriate, the outside legal counsel is instructed to prepare the appropriate application(s). The inventor should work closely and in a timely manner with legal counsel to ensure that an effective patent application is drafted.

Applications/inventions that are not accepted for patenting at any point in the above process may be abandoned, revised based on further development of the invention, or in some cases re-assigned to the inventor.

The Technology Licensing Officer negotiates with interested licensees or sponsors to secure an appropriate technology transfer, normally in the form of a License, Option, or, in some cases, Material Transfer Agreement. The inventor typically has no role in the negotiation process; the university provides input on agreement drafts. In return for licensing rights to an invention, licensees will be asked to file the final, nonprovisional patent application at their expense in the name of the university. If an invention requires further research to bring it to the point of commercial interest, companies will be encouraged to provide the necessary research support as part of either a Research and License Agreement, or an Option Agreement. Where an Option is involved, companies are offered an exclusive right to negotiate a license in return for a research commitment and/or appropriate payment.

The USPTO examines a nonprovisional patent application and will often issue objections to the invention's qualification for a patent, usually based on a finding of lack of novelty or usefulness, or because the invention is too obvious based on existing research in the field. The selected patent counsel guides the interactions and responses to the USPTO with the input of the university, inventor, and the System's Coordinator.

After a patent is issued and/or a license agreement is signed, the university staff or PSRF provides monitoring of licensing agreements, payment of patent maintenance fees, performing due diligence requirements and ensuring licensee obligations are fulfilled. Both the patent counsel and PSRF typically provide docketing services for each patent/agreement.

The above process establishes a close working relationship between university, inventors, the System Coordinator and internal staff/PSRF, which is important for the successful management of inventions for varied reasons. Inventors' knowledge of their research areas, and of companies that are active in related technologies, is a key element of the technical and market assessments for an invention, and of the search for licensees. In addition, inventions can serve as powerful catalysts for industrial research support. The search for such support is greatly enhanced by close collaboration between inventors and the licensing officers. Finally, the search for licensees willing to underwrite the cost of concept refinement and/or patent prosecution represents a useful "market test" for an invention.

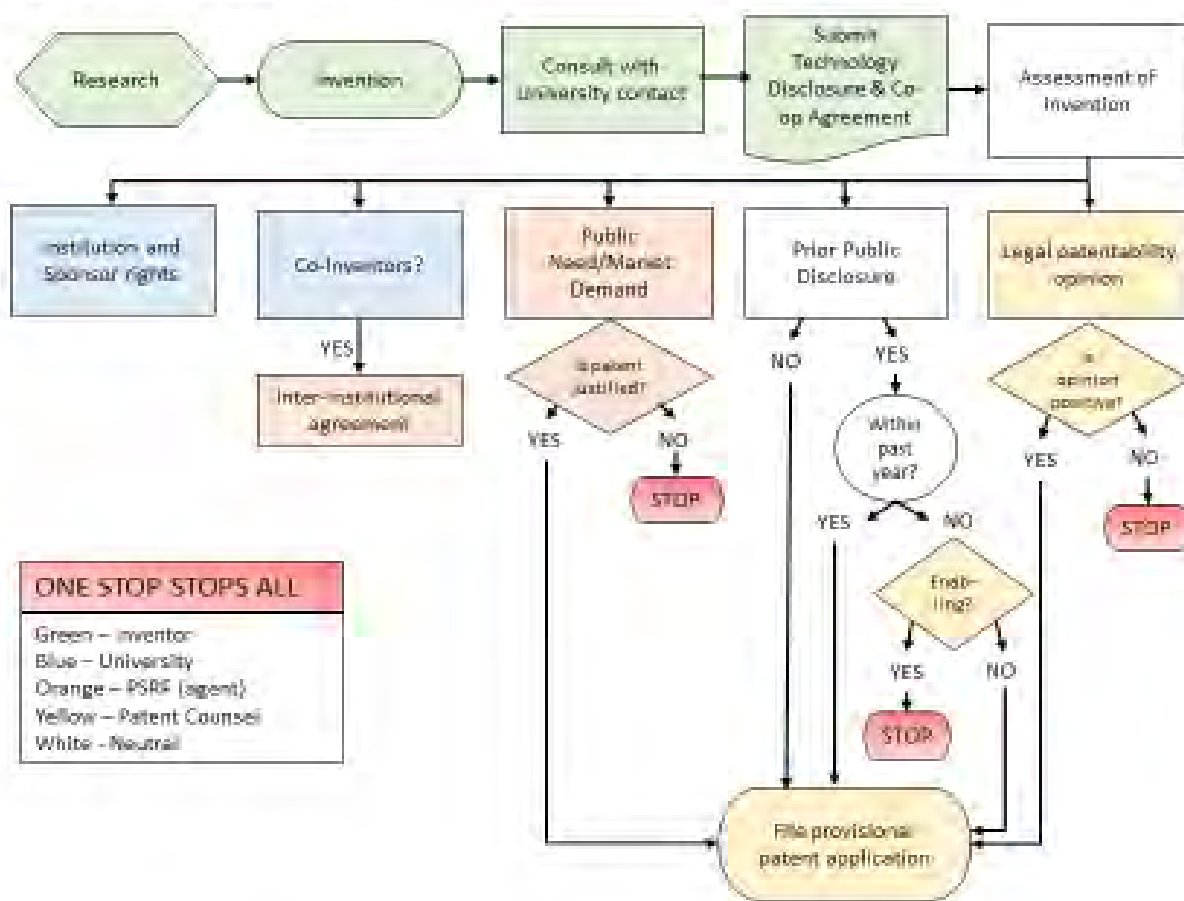
HOW DOES THE UNIVERSITY/SYSTEM OFFICE/PSRF ASSESS INVENTION AND INVENTION DISCLOSURES?

The Technology Licensing Officer reviews the Invention Disclosure, discusses the invention with the inventors and initiates an assessment to address the following:

- What is the state of development/reduction to practice of the invention? Is further development necessary? If yes, are the personnel, funding, facilities and equipment available?
- Is the invention marketable?
- What is a rough estimate of the size of the market? What is the potential competition from other products/technologies?
- Is the invention patentable? Is the invention new, non-obvious and useful? Is there prior art? Is the invention an improvement of an existing invention?
- If the invention is patentable, is the patent enforceable? Will it be difficult to determine if others are infringing the patent?
- Have there been any enabling public disclosures (publications, presentations, thesis/thesis defense or non-confidential discussions outside the university) of the invention? If yes, when. If no, are there plans to publicly disclose the invention? Any enabling public disclosure has an immediate and irreversible effect on patenting.
- Are there more cost effective methods of protecting the invention than a patent, e.g. copyright?

The university may consult with the inventors, patent attorneys, and industry contacts as part of this process. This review and assessment process is illustrated in the flow chart that follows.

Invention evaluation process



WHAT IS A TYPICAL PATENT PROTECTION STRATEGY?

Based on the initial review and assessment, the Technology Licensing Officer will formulate an appropriate strategy to protect the Invention. There will be cases when patent protection is not cost effective or the best method to commercialize an invention. A typical patent protection strategy is outlined below.

- File a provisional patent application either immediately prior to the first enabling public disclosure or immediately if there is concern about competing technologies under development. In order to file a fully enabled provisional patent application, you have to be available to assist the attorney preparing the application who is working from your Invention Disclosure.
- It is important to file a provisional patent application soon enough to fully protect the invention, but not unnecessarily early. A provisional patent application provides one year of protection in both the U.S. and internationally. This allows time for additional research, development, sample preparation, prototype development and assessment of the invention. Filing a provisional patent application unnecessarily early will limit the time available for further development and assessment.
- The next patenting decision is whether or not to convert the provisional patent application to a “full”, nonprovisional U.S. patent application and/or a Patent Cooperation Treaty (PCT) patent application. The latter is effective in other countries. This is a difficult decision due to the expense involved. A typical U.S. patent costs \$25,000 or more in legal costs and fees. International patent protection is highly dependent upon the countries involved, but typically begins at \$50,000.
 - If the invention is licensed (or optioned) to a company prior to or during the one year of protection provided by the provisional patent application, then the provisional will be converted to a “full” U.S. patent application and/or Patent Cooperation Treaty (PCT) patent application and the licensee (or optionee) typically pays all patent expenses.
 - If the invention is not licensed during the one year of protection provided by the provisional patent application, then the decision whether or not to convert is made by the university Provost and/or Director of Sponsored Research or designees with input from the inventors, the Technology Licensing Officer and the System’s Coordinator.
 - If the decision is made not to convert the provisional patent application, then you should discuss the following options with your university:
 - The provisional is abandoned and no further action is required
 - Depending upon the date of enabling public disclosures of the invention (if any), another provisional patent application could be filed
 - You could petition the university to release the invention to you.
 - If the decision is made to convert the provisional patent application to a “full” U.S. patent application and/or PCT patent application, then it is essential that you (the inventor), patent attorney and Technology Licensing Officer work cooperatively in preparing the patent application.

The USPTO routinely rejects patent applications on its initial review. Your insights and inputs in response to patent office inquiries and office actions will be required throughout the patent prosecution process.

HOW DO WE DECIDE WHETHER TO PROTECT AND/OR COMMERCIALIZE SOFTWARE?

Under current patent law software is rarely patentable. To qualify for a patent, software must do something, such as operate a machine. When software meets the stringent definitions of a patent and is created in conjunction with a product or process that “does something” useful, or novel, or non-obvious, it is treated as an invention under these guidelines; disclosure is required and ownership is subsequently determined. Otherwise, it is more cost effective and time efficient to protect software by copyright.

Finally, faculty (but not other employees) generally own software they develop, unless it is created at the initiation of the university as a work-for hire. If the university identifies a need for software for its own institutional use and

requests faculty to develop it, the university and the faculty member will sign a “Work for Hire”¹⁸ agreement and copyright will be held by the university. Likewise, a copyright assignment can transfer the copyright of created works to the university and retain specified rights for the creator.

If you wish to pursue commercialization of software that you own and want to utilize the resources of the Technology Licensing Officers, you may voluntarily disclosure and subsequently assign the copyright to the university, pursuant to a revenue sharing plan that complies with the CBA¹⁹. The university assesses the Invention Disclosure as it would other inventions in making its decision to accept or decline such an assignment.

Additional information and considerations for software can be found at www.passhe.edu/techtransfer, “Software: Patent or Copyright?”.

ARE THE UNIVERSITY RIGHTS TO AN INVENTION EVER ASSIGNED TO AN INVENTOR?

It is possible. Different scenarios could play out. If your university does not take title (i.e., ownership) to a patent for an invention resulting from U.S. government sponsored research, the title, by law, reverts to the federal government. The inventor can then petition the government to obtain title. In other cases, if the university decides not to pursue patent protection and/or choose not to actively market the invention, you may pursue development and commercialization of the invention and request the university to specifically release any claims on ownership. In either case, the inventor typically pays all patent costs. Your university contact can discuss alternatives based on the specific circumstances of a particular invention.

In developing any released invention or materials for commercial purposes, the inventor(s) shall not use university facilities and resources or the name of the university. Also when the university relinquishes its ownership of a patent to the inventors, it retains a non-exclusive, royalty-free license to practice the invention or use the materials for educational and research purposes at the university so that other members of the university community may benefit from the university’s prior investment.

¹⁸ APSCUF CBA, Article 39, B.9.

¹⁹ APSCUF CBA, Article 39, D.1.

WHAT IS A PATENT?

In the U.S., a patent gives the holder the right to exclude others from making, using, selling, offering to sell, and importing the patented invention. Thus, a patent does not necessarily provide the holder any affirmative right to practice a technology, since it may fall under a broader patent owned by others. Instead, it provides the right to exclude others from practicing it. The claims listed in a patent are the legal definition of an inventor's protectable invention. Additional information about patents, patent prosecution, and working with attorneys can be found at <https://www.uspto.gov/patent>.

WHAT CAN BE PATENTED?

Patentable subject matter includes processes, machines, compositions of matter, articles, some computer programs, methods (including methods of making compositions, methods of making articles, and even methods of performing business). Non-patentable subject matter includes theories, ideas, laws of nature, and scientific principles. Given this distinction, inventors need to reach a stage in their research where they have proof of concept and/or proto-types of their inventions.

CAN SOFTWARE BE PATENTED?

In order to obtain a patent for software, it must do something, such as operate a machine. There must be a well-defined algorithm embodied within that software that can be the basis for a patent disclosure. A graphical representation of the algorithm in the disclosure will show the flow of information and data and how it is processed. Some aspect of the software must be novel and useful and non-obvious.

However, patenting software is expensive and time-consuming and the process may take several years to complete, by which time the software may be obsolete. Registering a copyright for software is much faster, less expensive and can result in the product reaching the market without delay.

You can discuss your options with the university's Sponsored Research Office or the System's Technology Transfer Coordinator.

CAN DATABASES BE PATENTED?

Generally no, but third party access to a university database can be commercialized and controlled through subscription or license fees.

WHAT IS THE UNITED STATE'S PATENT AND TRADEMARK OFFICE (USPTO)?

The USPTO is the federal agency, organized under the Department of Commerce, which administers the patent system on behalf of the government. The USPTO employs patent examiners skilled in all technical fields in order to appraise patent applications. The USPTO also issues federal trademark registrations.

WHAT IS THE DEFINITION OF AN INVENTOR ON A PATENT AND WHO DETERMINES THIS?

An inventor is **one who conceives** and, either personally or through someone else, **reduces the invention to practice**. Conception is "the formation in the mind of a definite and permanent idea of the complete operative invention and method of obtaining it" such that one of ordinary skill in the pertinent art could practice the invention without extensive research or experimentation. Someone who constructs the invention based on the inventor's conception is not an inventor. An employer or sponsor is not generally an inventor.

A joint invention connotes collaboration of effort to produce a complete and operative invention, but one who merely suggests the idea of a result to be accomplished, rather than a means of accomplishing it, is not a joint inventor. Accordingly, where the invention arose from discussions among several individuals, one may influence the inventive

process without making a contribution that rises to the level of inventorship. A person who contributed only labor and/or the supervision of routine techniques or does all the experiments with direction from another person, but who did not contribute to the concept of one of the embodiments of the claimed invention is not considered an inventor.

A co-inventor must:

- Contribute in some significant manner to the conception or reduction to practice of the invention
- Make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention
- Do more than merely explain to the actual inventors well-known concepts and/or the current state of the art

Reduction to practice, on the other hand, is the making and testing of an invention in order to ensure that it will work for its intended purpose. This is the "actual" reduction to practice. Reduction to practice may also be "constructive." This occurs where a patent application supported by an enabling disclosure is filed with the USPTO. Under the law, an individual who contributes to the reduction to practice of the invention defined in the claims, but not the conception of the invention, is not an inventor. This is the case even where the reduction to practice is the most time consuming or difficult part of the inventive process.

In summary, an individual does not qualify as an inventor when that person

- Contributed an obvious element to the invention (or an element that is in the public domain)
- Researched and explained the state of existing art to the inventor
- Suggested an idea without also providing a way to implement the idea
- Followed instructions of and experiments designed by another
- Participated in consultations about the invention before or after conception of the invention

The inventor and co-inventors determine who on the research team qualifies as an inventor and what share of inventorship each contributed. The designation is made on the Invention Disclosure, although it can be changed later after consulting with patent counsel. Naming the correct inventors on the patent application is critical to the legal validity of the patent.

WHAT OCCURS IF THERE IS A DISPUTE OVER WHO QUALIFIES AS INVENTORS?

Multiple inventors must agree upon each one's contribution toward the invention and declare it as a percentage on the Invention Disclosure, which they sign and which is subsequently used to prepare a patent application. The university makes no determination on individuals' contributions, but accepts it as presented on the signed Disclosure. A patent attorney can assist the inventors to clarify their share of inventorship as he/she is preparing the patent application. Honest mistakes on the Invention Disclosure will be corrected during these conversations. This is a matter governed by U.S. patent law.

HOW DO I DOCUMENT THAT I "CONCEIVED" THE INVENTION AND "REDUCED (IT) TO PRACTICE?"

You should use an inventor's notebook to record your ideas, invention process, experimental tests and results and observations. It is not a legal document but is valuable, if properly organized and maintained, since it can help establish dates of conception and reduction to practice. The notebook is a systematic device for recording all information related to an invention in such a way that it can be used to develop a case during a patent challenge or patent-related lawsuit. The notebook is also a valuable tool for the inventor since it provides a chronological record of an invention and its reduction to practice.

The notebook is a primary research record. Each researcher should maintain an individual notebook starting with the conception of the idea and beginning of the research. The notebook should include documentation of the hypotheses, experiments and initial analysis or interpretation of these experiments. The notebook is usually written as the experiments progress, rather than a later date. To ensure that data cannot be easily altered, notebooks with permanently bound pages are recommended. Researchers are encouraged to write only with un-erasable pen, to sign and date each page, and to have their notebooks inspected periodically by another scientist who can read and

understand it. All of these guidelines can be useful in proving exactly when a discovery was made, in the case of a patent dispute.

For detailed guidelines on maintaining a notebook see: <http://www.iphandbook.org/handbook/ch08/p02/>

WHO IS RESPONSIBLE FOR PATENTING?

The university uses outside law firms for invention protection, thus assuring access to patent specialists in diverse technology areas. You will work with the patent attorneys as they draft the patent applications and responses to patent office actions. If using PSRF services, technology transfer staff will solicit several patent attorneys and allow the university to select a firm. The PSRF staff also monitors the patent prosecution. If the university uses its own staff services, the university must use the state-appointed intellectual property counsel that is under contract with the Commonwealth's Office of General Counsel. University Legal Counsel will direct administrators to current appointed patent counsel.

WHAT IS THE PATENTING PROCESS?

The process involves two types of legal filings with the U.S. Patent and Trademark Office (USPTO).

First, the provisional application establishes the first inventor to file and is a less formal patent application, although it must be as comprehensive as possible.. Second, nonprovisional patent applications are formal patent applications that receive an examination by the USPTO.

In the State System, both patent applications are drafted by a patent attorney, who will ask you, the inventor, to review an application before it is filed and will also ask questions about inventorship of the application claims. A provisional application establishes the priority date of the invention and expires after one year. It is never examined by the Patent Office. On or before the end of one year the university's patent counsel must file a final "nonprovisional" patent application to replace the provisional filing. (During this one-year period efforts are made to find a potential licensee who can support future patenting costs.)

Additional information about filing patent applications can be found on these external websites²⁰:

- working with patent practitioners – <http://otl.stanford.edu/documents/betterpatents.pdf>
- disclosure requirements – http://otl.stanford.edu/inventors/inventors_discreqs.html
- guidelines for reviewing draft applications http://otl.stanford.edu/documents/fw_patapproveinstr.pdf

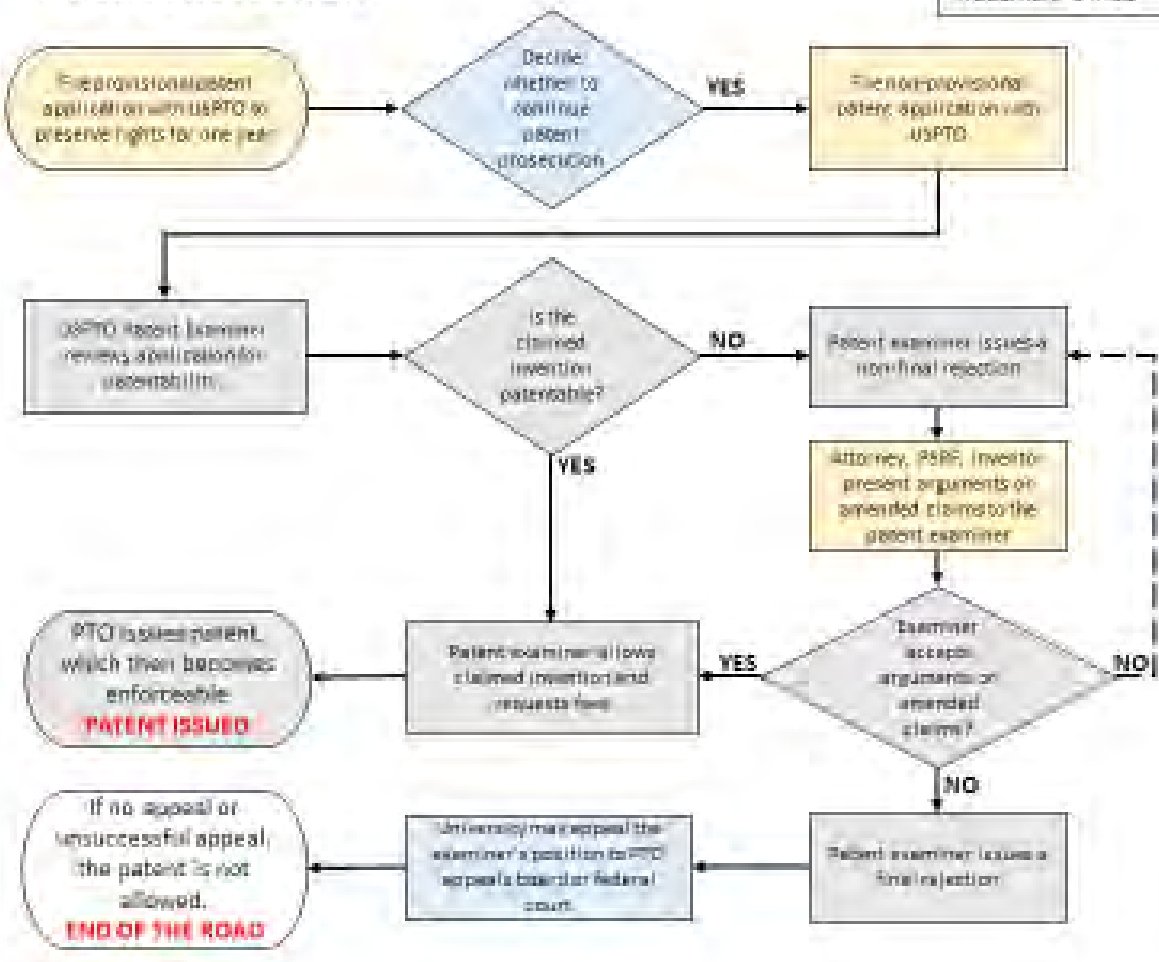
At the time a nonprovisional application is filed, the patent attorney will ask you to sign an Inventor's Declaration (an oath stating that you are an inventor) and an Assignment, which evidences the inventor's assignment of the patent to the university. Depending on the technology, about two years or more after filing a nonprovisional patent application, the patent attorney will receive written notice from the USPTO as to whether the application and its claims have been accepted as filed. More often than not, the USPTO rejects the application because questions need to be clarified or the claims are not patentable over the "prior art" (anything that workers in the field have made or publicly disclosed in the past). The letter sent by the USPTO is referred to as an Office Action. If the application is rejected, the patent attorney must file a written response, usually within three to six months. Generally the attorney may amend the claims and/or point out why the USPTO's position is incorrect. This procedure is referred to as patent prosecution. Often it will take two USPTO Official Actions and two responses by the patent attorney – and sometimes more – before the application is resolved. The resolution can take the form of a USPTO notice that the application is allowable – in other words, the USPTO agrees to issue a patent.

During this process, input from the inventor(s) is often needed to confirm the patent attorney's understanding of the technical aspects of the invention and/or the prior art cited against the application. The USPTO holds patent applications confidential until published by the USPTO, which is typically 18 months after the nonprovisional filing.

²⁰ Permission granted.

ROAD MAP FOR TYPICAL U.S. PATENT PROTECTION

Yellow – Patent Counsel
 Blue – University
 Gray – US Patent & Trademark Office



IS THERE SUCH A THING AS A PROVISIONAL PATENT?

No. However, to confuse the issue, there is a provisional application, which is described below.

WHAT IS THE DIFFERENCE BETWEEN A PROVISIONAL APPLICATION AND A REGULAR (OR “UTILITY” OR “NONPROVISIONAL”) PATENT APPLICATION?

A U.S. provisional application is a legal document filed with the USPTO that establishes a filing date. This provides a tool for preserving patent rights while reducing initial costs and providing time to assess the market opportunity for the invention and/or prepare a utility or nonprovisional patent application. This occurs because the provisional application is not examined during the year in which it is pending.

A nonprovisional U.S. application and related foreign applications must be filed within one year of the provisional application in order to receive the benefit of its early filing date. However, only the material described and enabled in the provisional application can receive this benefit. As a result, the patent practitioner will need your assistance preparing the application even when it is filed as a provisional.

WHAT IS DIFFERENT ABOUT FOREIGN PATENT PROTECTION?

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. In most foreign countries, however, an inventor will lose any patent rights if he or she publicly discloses orally or in writing the invention prior to filing a patent application in one country. In contrast, in the United States, the inventor has a nominal one-year grace period after written public disclosure during which a provisional patent application may be filed, subject to certain requirements. However, often it is strategically best to proceed in most cases as if there were no U.S. grace period. The costs for foreign patent protection are very high.

IS THERE SUCH A THING AS AN INTERNATIONAL PATENT?

No, an international patent does not exist, but an international agreement known as the Patent Cooperation Treaty (PCT) provides a streamlined filing procedure for most industrialized nations. For U.S. applicants, a PCT application is generally filed one year after the corresponding U.S. application (either provisional or regular) has been submitted. The PCT application must later be filed in the national patent office of any country in which the applicant wishes to seek patent protection, generally within 30 months of the earliest claimed filing date.

WHAT IS GAINED BY FILING AN APPLICATION UNDER THE PATENT COOPERATION TREATY (PCT)?

Filing under the PCT provides two advantages. First, it delays the need to file costly foreign applications until 30 months after the initial filing date, giving the inventor and university 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 speak to the patentability of the claims, which can save significant costs in prosecuting foreign patent applications.

The international Patent Cooperation Treaty permits a patent application filed in a second country (or a PCT application) to claim the benefit of the filing date of an application filed in a first country. However, pursuant to this treaty, these so-called “convention applications” must be filed in foreign countries (or as a PCT) within one year of the first filing date of the U.S. application.

Major factors in determining whether or not to file a PCT are the potential geographic markets for the technology and the cost/benefit assessment of the additional costs of protection in numerous countries.

WHAT IS THE TIMELINE OF THE PATENTING PROCESS AND RESULTING PROTECTION?

Currently, the average U.S. utility patent application is pending for approximately three years, though inventors in the computer, networking and communications fields should plan on a longer waiting period. Once a patent is issued, it

is enforceable for 20 years from the initial filing date of the application that resulted in the patent, assuming that USPTO-mandated maintenance fees are paid over the life of the patent.

WHY DOES THE UNIVERSITY PROTECT SOME INTELLECTUAL PROPERTY THROUGH PATENTING?

Patent protection is a requirement of a potential commercialization partner (licensee) because it can protect the often sizable investment required to bring the technology to market. Due to their expense, patent applications are not possible for all intellectual property. The university carefully reviews the commercial potential for an invention before investing in the patent process. However, because the need for commencing a patent filing sometimes precedes finding a licensee, we look for cost-effective ways to seek early protections (i.e., the provisional patent application) for as many promising inventions as possible.

WHO DECIDES WHAT GETS PROTECTED?

The university administrators, the inventor(s), the agent and the System's Coordinator together discuss relevant factors in deciding whether to file a patent application. Ultimately, the university makes the final decision as to whether to file a patent application or seek another form of protection.

WHAT DOES IT COST TO FILE FOR AND OBTAIN A PATENT? WHO PAYS FOR IT?

Filing a U.S. provisional and the subsequent nonprovisional patent application may cost between \$5,000 and \$15,000, and sometimes more. The services of the PSRF Technology Licensing Officers cost up to an additional \$13,000 paid in progressive payments. To obtain an issued patent may require an additional \$10,000 to \$25,000 for patent prosecution. Filing and obtaining issued patents in other countries may cost \$25,000 or more per country. Also, once a patent is issued in the U.S or in foreign countries, maintenance fees are required to keep the patent "alive" and enforceable.

If the inventor is willing to assign the patent to the university, and the university is willing to accept it, then the university can pay for the cost of filing a patent. Alternately, the university may seek an industrial partner to pay the costs. The university also pays for the costs of marketing the invention. Most System universities use the services of Penn State Research Foundation (PSRF) as a technology transfer agent responsible for protecting, developing, and licensing inventions made by university inventors. If the university does not own the invention by receiving an assignment from the inventor, it will not pay for a patent and any costs leading to filing a patent.

WHAT IF I CREATED THE INVENTION WITH SOMEONE FROM ANOTHER INSTITUTION OR COMPANY?

Typically, the technology will be jointly owned and each inventor assigns the invention to his or her employer. The Technology Licensing Officer will draft an "inter-institutional" agreement that provides for one of the institutions to take the lead in protecting and licensing the invention, sharing of expenses associated with the patenting process, and allocating any licensing royalties.

WILL THE UNIVERSITY INITIATE OR CONTINUE PATENTING ACTIVITY WITHOUT AN IDENTIFIED LICENSEE?

Often the university accepts the risk of filing a patent application before a licensee has been identified. After university rights have been licensed to an exclusive licensee, the licensee generally assumes the patenting expenses. At times the university must decline further patent prosecution after a reasonable period (often a year or two) of attempting to identify a licensee without success.

WHERE CAN I FIND MORE INFORMATION ABOUT THE PATENT PROCESS?

Additional information about patents, patent prosecution, and working with patent practitioners can be found at this external website²¹: http://otl.stanford.edu/inventors/inventors_patent.html.

²¹ Permission granted.

Other Intellectual Property

WHAT IS A COPYRIGHT AND HOW IS IT USEFUL?

Copyright is a form of protection provided by the laws of the United States to the authors of “original works of authorship.” This includes computer software, literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. This protection is available to both published and unpublished works. The Copyright Act generally gives the owner of copyright the exclusive right to conduct and authorize various acts, including reproduction, public performance and making derivative works. Copyright protection is automatically secured when a work is fixed into a tangible medium such as a book, software code, video, etc. The university generally does not registers copyrights, unless it is related to a commercial product that is undergoing patent prosecution.

HOW CAN I REGISTER MY WORK FOR COPYRIGHT PROTECTION?

Registering a copyright is a good idea if you, or the University, are going to commercialize the work, or if you simply want to prevent infringement, i.e., unauthorized use by others. Use [copyright.gov](https://www.copyright.gov/registration/) to register your work, starting at <https://www.copyright.gov/registration/>. An FAQ on registering copyrights is available at <https://www.copyright.gov/help/faq/faq-register.html#register>. The minimum fee is currently \$35.00 for an initial single author registration, but additional fees may be incurred for special services and then for maintenance of the copyright.

WHAT IS A TRADEMARK OR SERVICE MARK AND HOW IS IT USEFUL?

In short, a trademark, or service mark, is a brand name. A service mark is any word, name, symbol, device, or combination that is used, or intended to be used, in commerce to identify and distinguish the services of one provider from those of others, and to indicate the source of the services.

WHAT IS TRADEMARK REGISTRATION?

Trademark registration is available for logos, product names, and tag lines. It’s a procedure in which the United States Patent and Trademark Office (USPTO) provides a determination of rights based upon a business use of the mark. However, it is not necessary to register a trademark or service mark to prevent others from infringing upon the trademark. Trademarks generally become protected as soon as they are adopted by an organization and used in commerce, even before registration. Although federal registration of a mark is not mandatory, it has several advantages, including notice to the public of the registrant's claim of ownership of the mark, legal presumption of ownership nationwide, and exclusive right to use the mark on or in connection with the goods/services listed in the registration.

WHAT IS THE POLICY ON TRADE SECRETS?

The university generally does not keep trade secrets because research results are routinely disclosed to others and published widely. However, tangible research property (e.g., biological material) can be licensed as “know-how,” which falls into the trade secret category of intellectual property.

Marketing an Invention

Marketing to find a licensee section

WHAT TYPE OF INVENTIONS HAVE COMMERCIAL POTENTIAL?

Inventions with commercial potential may involve those that solve an existing problem or need that is important to potential customers and can be produced at a competitive cost. It must satisfy a market demand and provide a competitive advantage. The best evaluator of the commercial potential of a specific invention is a Technology Licensing Officer, who reviews the Invention Disclosure after it is submitted to the university.

WHY DOES THE UNIVERSITY MARKET MY INVENTIONS?

The university is committed to finding the best licensee for the technology – a company that will dedicate resources (time, money, and people) to developing the technology. A successful marketing effort will result in your research providing a benefit to industry and, ultimately, the public. It can contribute to economic development and improve quality of life.

HOW CAN I ASSIST IN MARKETING MY INVENTION?

Your active involvement and enthusiasm can dramatically improve the chances of matching an invention to an outside company. Your research and consulting relationships are often helpful in identifying both potential licensee companies and technology champions within those organizations. 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 technology transfer results are obtained when the inventor and the licensing professional work together as a team to market and promote the technology. Publications and conference presentations, at the appropriate time, for the target market can spread word of the invention.

HOW DOES THE UNIVERSITY MARKET MY INVENTIONS?

The Technology Licensing Officers use many sources and strategies to identify potential licensees and market inventions. Leads and contacts developed by the inventors are the primary target market. Market research can also assist in identifying prospective licensees. In addition, licensing officers use public websites to market inventions, and may make direct informational mailings with companies. Inventor presentations and publications, including trade journals and newspapers, are often excellent marketing tools as well.

Marketing activities may occur before, during and/or after the invention is patented.

HOW ARE MOST LICENSEES FOUND?

Universities with active technology transfer programs have found that the majority of licensees were known to the inventors. Existing research initiatives, consulting relationships, networking, and conferences are often valuable sources for identifying licensees. The agent, PSRF, may also identify licensees through existing relationships of the licensing staff and market research.

HOW LONG DOES IT TAKE TO FIND A POTENTIAL LICENSEE?

It can take months and sometimes years to locate a potential licensee, depending on the attractiveness of the invention and the size and intensity of the market. It is often challenging to attract a licensee because most faculty inventions tend to be in the early stage of the development cycle and require further research and development and substantial investment to commercialize them.

WHAT HAPPENS AFTER A COMPANY EXPRESSES INTEREST IN MY INVENTION?

After a company with interest in the invention is identified, discussions begin and it is likely that a series of agreements will be negotiated and executed. These may include the following.

- Confidential Disclosure Agreements allow the parties to share proprietary information under confidentiality.

- Material Transfer Agreements allow one party to share materials, samples or prototypes with another party for evaluation purposes and to determine if there is interest in licensing. This sharing of materials occurs while maintaining control of the invention, ownership and rights.
- In an Option Agreement the university grants certain limited rights in the invention to another party for a defined period of time for the purpose of evaluating and/or further developing the invention.
- License Agreements transfer well-defined rights from one party to another party for the purpose of commercializing an invention in return for some form of compensation, usually financial benefit. Key elements of License Agreements include:
 - Identification of rights being licensed
 - Definition of the Field of Use
 - Type of license – exclusive, non-exclusive or semi-exclusive.
 - Fees – up-front fee, milestone payments
 - Royalties – running royalty, minimum annual royalty
 - Due diligence – licensee’s obligations to make progress toward commercialization of the invention
 - Reimbursement of all university patent expenses associated with the invention

After the execution of license agreements the Technology Licensing Officer continues to communicate with licensees to monitor the payment of fees, royalties and equity and due diligence requirements; to seek licensee’s input regarding patenting decisions and payment of patent expense.

DO U.S. EMBARGOES AND /OR EXPORT CONTROL LAWS AFFECT MARKETING EFFORTS?

Possibly. If a foreign company or any company owned by a foreign national is interested in assessing the invention for potential licensing and commercialization, the university normally signs an agreement with them to provide access to the data and the claims of the invention. Before releasing it to the third party, the invention and related data must be assessed to determine if it is controlled by U.S. Export Control regulations issued by the Department of Commerce, Department of State and possibly the Department of Energy. Also, the country of residence of the company or the foreign national must be screened against the list and sanctions on embargoed countries and specially designated nationals as designated by the U.S. Treasury Department and other federal agencies.

For assistance on this topic, please contact the university sponsored research office or the System’s Export Control Officer.

WHAT IS A START- UP?

A start-up is a new business entity formed by entrepreneurs to commercialize one or more related intellectual properties. An inventor may be the entrepreneur or unrelated individuals may constitute the start-up that is interested in your invention.

WILL THE UNIVERSITY LICENSE A START-UP?

Before a license can be granted to a start-up, the invention is marketed to other potential licensees who may have an interest in commercializing it. This process normally will take several months to complete, and fulfills our responsibility to identify the best company or companies for commercialization. From a technology transfer perspective, the startup company with an entrepreneur committed to developing a particular technology may be the best licensee, but the start-up company must offer a viable plan to commercialize an invention in order to receive a license. State resources such as Small Business Development Centers or the Ben Franklin Technology Partners are available for technical assistance for start-up businesses. If a new business start-up is the best choice for commercializing the technology, the university will negotiate with a representative of the company to grant a license to the new company. If the start-up has university faculty associated with it, the company representative should not be a university faculty member in order to mitigate against conflicts of interest.

WHO DECIDES WHETHER TO FORM A START -UP?

An entrepreneur must decide to form a start-up. The entrepreneur can be from within or outside the university. An entrepreneur should consider a few key factors when thinking about becoming involved in a start-up company:

- Development risk – often large companies in established industries are unwilling to take the risk on an unproven technology.
- Development costs versus investment return – because of the high risk of start-up companies, investors will consider the potential to obtain many multiples of return before committing funds to a new company.
- Platform technology – few companies survive on one product alone; technologies that can be commercialized for multiple products or services are more likely to enable successful start-up companies.
- Competitive advantage and target market – these must be sufficiently large for the start-up to succeed
- Potential revenues – this must be sufficient to grow and sustain a company.

WHAT ROLE DOES AN INVENTOR USUALLY PLAY IN A COMPANY?

University inventors often serve as technology consultants, advisors, or in some other technical developmental capacity. In many cases, the start-up investors and management team identify the best role for an inventor, based on the inventor's expertise and interests. As the company matures, and additional investment is required, the inventor's role may change. Faculty involvement with a licensee (start-up or established company) will generally require a Conflict-of-Interest review before a license for university-owned patents can be approved. It is also wise for inventors to have agreements regarding their roles with a start-up reviewed by their own counsel to ensure that all personal ramifications – including taxation and liabilities – are clearly understood.

HOW MUCH OF MY TIME AND EFFORT WILL IT TAKE?

Starting a company requires a considerable amount of time and effort. Until the start-up team is identified and engaged, the entrepreneur will need to undertake or coordinate nearly every task associated with the start-up process as well any further technology development. After the team is in place, you may be asked to be involved in investor discussions, help the company put together a research group, or help with business strategy, etc.

DOES THE UNIVERSITY HAVE ANY REQUIREMENTS THAT PERTAIN TO EMPLOYEE or FACULTY-OWNED START-UPS?

Employee-owned companies represent unique issues when it comes to licensing university-owned inventions. Inventors can assign their invention to the university, it can be patented by the university as described in previous sections, and the university can then license it to the inventors' company in an arrangement that must meet the requirements of state law. (24 Pa. C.S.A. § 2521 *et seq.*) The System Technology Transfer Coordinator and University Legal Counsel can offer guidance on this point.

When the university considers licensing an assigned invention to an inventor-owned company, it undertakes a due diligence review with the goal of affirming the company is viable before making any commitment. The company will submit a brief business plan that demonstrates it is managed by experienced senior management personnel and is financially and commercially viable. To remove any internal conflicts of interest the negotiations will be at arms-length, with the university relying on the third-party Technology Licensing Officer and the faculty inventor relying upon an agent. Guidelines for the business plan contents and reviewing a faculty/inventor owned business venture are available from the System's Coordinator.

WHERE CAN I FIND OUT MORE INFORMATION ABOUT START -UPS?

Contact the following resources available from other agencies in Pennsylvania:

- Local Small Business Development Center (SBDC) - <http://www.pasbdc.org/centers> -
- A regional business incubator/accelerator - http://www.innovatorsguide.org/incubators/pennsylvania_business_incubators.htm
- Ben Franklin Technology Partners - <https://benfranklin.org/locations/>

Navigating Conflict of Interest

HOW DOES THE UNIVERSITY DEFINE A 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 such that an independent observer might reasonably question whether the individual's professional actions or decisions are determined by considerations of personal gain, financial or otherwise. A conflict of interest may also arise when an individual uses their university position and/or university resources for the private, pecuniary gain of the individual, a member of the individual's immediate family, or a business with which the individual or the individual's immediate family is associated. "Immediate family" includes one's spouse, children, parents and siblings. A conflict of interest depends on the situation, and not on the character or actions of the individual. Examples include additional financial relationships proposed between a faculty member and a prospective licensee or research sponsor. System Procedure/Standard 2016-22 provides additional guidance.

WHAT KINDS OF ISSUES CONCERN CONFLICT OF INTEREST REVIEWERS?

Typically, the university is concerned with whether or not a researcher/faculty member can separate university research from company research; provide unbiased and appropriate guidance and support to students; maintain academic integrity in research and education; and, adhere to government mandated policies. In addition, inventors are often affiliated with a potential licensee, either as a consultant, stockholder, board member, founder, or otherwise, so the university and the inventor must be particularly conscious of conflict of interest issues in licensing efforts. Researchers and faculty members are responsible for documenting and disclosing any outside arrangements that constitute situations or interests requiring review. Whenever a sponsor or licensing agreement is proposed a Conflict of Interest review should be conducted.

HOW DOES THE UNIVERSITY MANAGE CONFLICT OF INTEREST?

The university strives to reduce an actual, or the appearance of, conflict of interest that could affect public perception of the integrity of the research and the researcher. The disclosures are reviewed by administrators designated by the President to determine if there is an appropriate management plan for the Conflict of Interest. In consultation with the researcher/inventor, an individualized resolution plan is developed that outlines measures that will mitigate, manage or eliminate the Conflict of Interest. Conflicts of Interests can be managed without negative impacts on research or licensing.

WHEN SHOULD I SEEK GUIDANCE ON CONFLICT OF INTEREST?

Whenever a question or uncertainty arises, you should seek guidance from your Provost or Sponsored Research Office for license-related issues and/or research-related issues. There are two times in particular when conflict-of-interest disclosures are critical: when research proposals are submitted to external sponsors in which you have a financial interest and when a license or option is being considered for a company in which you have additional financial relationships (e.g. equity, sponsored research, consulting).

WHAT IS CONFLICT OF COMMITMENT?

Conflicts of commitment usually involve issues of time allocation. Whenever an individual's outside consulting activities interfere with performance of their university obligations, or whenever a full-time faculty member's primary professional loyalty is not to their university, e.g., a start up company, a conflict of commitment exists. The best approach is to fully disclose your situation to the appropriate person (e.g., your Dean/Provost/Director of Sponsored Research) and discuss the implications for your university responsibilities.

CAN MY PRIVATE CONSULTING ACTIVITY CREATE ANY ETHICS ISSUES?

Typically a conflict of interest is triggered by financial interests. However, it is also important to note that you may undertake private consulting only when it is done without use of university resources, including, but not limited to equipment, staff, laboratories, equipment, and computer networks. (Faculty may make use of university facilities

that are available to the public, such as libraries, in the course of fulfilling a private consulting contract.) This restriction is necessitated by compliance with the conflict of interest provisions of Pennsylvania's Public Official and Employee Ethics Act. However, this restriction does not preclude use of university resources when the university receives fair market value compensation from the employee, or its consulting client, pursuant to an approved written agreement between the parties; such as a facility use agreement or a faculty-owned business operating in a university-owned business incubator under an approved agreement.

WHAT IS A LICENSE?

A license is a permission granted by the owner of intellectual property that allows another party to act under all or some of the owner's rights, usually under a written license agreement. Such rights may include manufacture, distribution, sale, etc.

WHAT IS A LICENSE AGREEMENT?

License agreements describe the rights and responsibilities related to the use and exploitation of intellectual property developed at the university. Our standard license agreements usually stipulate that the licensee should diligently act to bring the intellectual property into commercial use for the public good and provide a reasonable return to the university.

HOW IS A COMPANY CHOSEN TO BE A LICENSEE?

A licensee is chosen based on its ability to commercialize the technology for the benefit of the general public. Sometimes an established business with experience in similar technologies and markets is the best choice. In other cases, the focus and intensity of a start-up company is a better option. Typically, a university does not have multiple potential licensees bidding on an invention.

General operations of the State System universities are subject to the Commonwealth Procurement Code. The Code applies to the disposal of supplies, which also includes "intangible personal property" i.e. intellectual property. Companies that seek licenses may seek exclusive licenses in a specific field or geographic area. Administrative guidelines are available to identify the occasions when System universities can enter into exclusive licensing agreements. For example, highly specialized inventions with limited markets are marketed on internet portals as well as directed contacts in the specialized market. This marketing may be sufficient to satisfy the Code. In addition, sole sourcing an exclusive license is possible in limited unique circumstances, such as faculty-owned businesses and research sponsors.

WHAT CAN I EXPECT TO GAIN IF MY INVENTION IS LICENSED?

According to System policy and the faculty CBA, a share²² of net income from a license is provided to the inventor(s). Most 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 a faculty member's 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 will be more successful in their commercialization efforts if the faculty inventor is actively involved. This can range from infrequent, informal contacts to a more formal consulting relationship. Working with a new business start-up can require substantially more time, depending on your role with the company and your continuing role within the university. Your participation with commercial entities is guided by conflict-of-interest and conflict-of-commitment principles.

²² APSCUF CBA Article 39, D.1.

WHAT ACTIVITIES OCCUR DURING COMMERCIALIZATION?

The signing of a License Agreement is usually the beginning of a long term relationship. 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. The licensee's performance is monitored by the licensing specialist for the duration of the license. Most License Agreements require periodic financial or development reports from the licensees.

WHAT IS THE INVENTOR'S ROLE DURING COMMERCIALIZATION?

The inventor's role can vary depending on your interest and involvement and on the interest of the licensee in utilizing your services for various assignments.

WHAT ROYALTIES ARE GENERATED FOR THE UNIVERSITY IF COMMERCIALIZATION IS SUCCESSFUL?

License agreements often include requirements for payments in the form of upfront fees, minimum annual royalties, milestone payments, earned royalties and sometimes equity. Licensing fees (upfront, annual minimum, milestones) range from very modest fixed amounts to a percentage of sales. If licensed products are eventually developed and sold (which can take years to occur), earned royalties can generate revenues. These payments are usually based on product sales and can vary considerably. Most licenses do not yield substantial royalties. However, the rewards of an invention reaching the market are often more significant than the financial considerations alone.

WHAT WILL HAPPEN TO MY INVENTION IF THE START-UP COMPANY OR LICENSEE IS UNSUCCESSFUL? CAN THE INVENTION BE LICENSED TO ANOTHER ENTITY?

Licenses typically include performance milestones that, if unmet, can result in termination of the agreement. Also, License Agreements expire after a number of years and the licensee and the university may renew or not renew the Agreement. This allows the university to pursue subsequent licensing to another business. However, time delays and other considerations can hinder this re-licensing effort.

Royalty Distributions

WHAT ARE ROYALTIES?

“Royalties” is a common term that covers the various types of gross licensing revenue, which could take several different forms depending on negotiation with a licensee. Licensing revenue can include upfront payments from licensees, annual fees, percentage of licensees’ sales, payment per unit sold, or a return on equity or a combination of these. All are some of the most common methods for calculating licensing revenues.

HOW ARE LICENSE ROYALTIES (REVENUES) DISTRIBUTED?

The System’s agent, Penn State Research Foundation, is responsible for collecting periodic reports and licensing revenue from licensees. It forwards the reports and the revenue to the university that manages the accounting of the patent expenses associated with each technology. In the situation of a **non-faculty inventor** (i.e. employee, guest researchers and so on) the university is free to establish a schedule of net income distribution according to its own policy. With faculty inventors, net income from license revenues are shared with the inventors according to the agreed upon divisions as illustrated below which incorporates the CBA provisions related to Substantial Use as well as federal funding or voluntary assignment²³.

Patent Ownership & Net Income Distribution for State System Faculty*
Initially Issued April 26, 2010

Situation	Ownership	Net Income distribution ²
“Substantial Use” > \$40,000	University evaluates ownership per procedures of the Inventor’s Guide and Art 39.D. of the CBA. ¹ University-Faculty ownership agreement	Inventors 60% – University 40% until Substantial Use (\$40,000+) repaid to University, then: Inventors 70% – University 30% (APSCUF CBA required) ³
Federal funding >\$40,000 (=Substantial Use)	University evaluates ownership per procedures of the Inventor’s Guide and Art 39.D. of the CBA. University elects 100% ¹	Inventors 60% – University 40% until Substantial Use (\$40,000+) repaid to University, thereafter: Inventors 70% – University 30% (APSCUF CBA required)
Federal funding < \$40,000 (No Substantial Use)	University elects 100% ¹	Inventors 60% – University 40% (System Policy)
No Federal Funding AND No Substantial Use	Faculty 100% - May assign to University to access PSRF/staff services	If assigned to University: Inventors 60% – University 40% (System Policy)
On “own time” without use of University facilities; including Sabbatical	Faculty 100% - May assign to University to access PSRF/staff services	If assigned to University: Inventors 60% – University 40% (System Policy)

1 When the university is interested in electing or accepting ownership, it sends the Invention Disclosure to PSRF/internal staff for evaluation. The university must have ownership in order to send the Invention Disclosure to PSRF/internal staff due to the investment of institutional funds.

2 Net Income is the total income generated by the licensing, sale, distribution or commercialization of an invention, less the direct and indirect expenses incurred by the university for:

- a. Substantial use of university resources/support/facilities.
- b. The sale or licensing of the invention.
- c. The production, development, maintenance, and distribution of the patent or copyright and/or invention.
- d. Litigation and other steps to obtain, maintain, enforce or defend the patent or copyright.

3 Faculty shall receive no less than 60% of the net income until the agreed substantial support of the project is repaid to PASSHE/university and no less than 70% of net income thereafter. (Article 39.D.1.)

²³ APSCUF CBA, Article 39, D.1.

* Net Income Distribution for students, other employees and other parties are established by the university. See Part 2 and Part 3 for more information.

HOW IS 'NET REVENUE' (INCOME) CALCULATED?

Simply stated, Net Income is the income realized from royalties and license fees after the payment of related expenses incurred to generate the income. The faculty CBA contains a detailed definition of Net Income as “the total income generated by the licensing, sale, distribution, or other commercialization of Intellectual Property, less the direct and indirect expenses incurred by the System/university for:

- Substantial Use of State System/university resources/support/facilitates
- The sale or licensing of Intellectual Property
- The production, development, maintenance, and distribution of Intellectual Property
- Litigation and other steps to obtain, maintain, enforce, or defend the patent/copyright/trademark/trade secret/license rights of Intellectual Property²⁴

WHAT ARE THE TAX IMPLICATIONS OF ANY ROYALTY DISTRIBUTIONS I RECEIVE FROM THE UNIVERSITY?

License royalties are typically reported under “Other Income” in Box 3 of Form 1099-MISC. Consult a tax advisor for specific advice.

HOW ARE INVENTOR PAYMENTS DISTRIBUTED IF THERE ARE MULTIPLE INVENTORS?

For patented inventions, the “inventors’ share” of net royalties is divided according to each inventor’s contribution to the invention as declared in the initial Invention Disclosure unless all inventors agree in writing to another distribution formula of their collective choice.

²⁴ APSCUF CBA, Article 39, C.3.

WHAT DOES THE UNIVERSITY DO WITH ITS SHARE OF NET REVENUE?

The university shares the royalties it generates with university inventors as well as with partnering institutions. After recovering the allowed expenses, the university's share of net revenue is reinvested in research and education as mandated by the federal Bayh-Dole Act. These funds foster the creation of the next generation of research, innovators, and entrepreneurs.

Through a successful technology transfer and commercialization effort, the university builds relationships with inventors and licensees while assisting in the transfer of knowledge and technology to the private sector. The important university-industry relationships developed through technology transfer and products sold by the licensees help us enrich our university, community and the Commonwealth.

KEY UNIVERSITY CONTACTS

PASSHE University	University Authorized Official	Confirms Substantial Use	Signs License Agreements	Senior Sponsored Research Administrator
Bloomsburg	Dean, Graduate Studies & Research	Dean of the College of Science and Technology	VP for Administration and Finance	Dean, Graduate Studies & Research
California	Associate VP of University Technology Services	Dean of the Eberly College of Science & Technology	VP for Administration & Finance	Director Sponsored Programs & Research
Cheyney	Provost /VP Academic Affairs or President	Provost/VP Academic Affairs	VP Finance and Administration	
Clarion	Provost/VP for Academic Affairs	Grants Director	VP for Finance & Administration	Grants Director
East Stroudsburg	President	Provost	VP Administration and Finance	Director, Office of Sponsored Projects and Research
Edinboro	Provost	. Dean, College of Science and Health Professions	VP for Finance & Admin	Dean of Graduate Studies and Research
Indiana	Assistant Dean for Research, School of Graduate Studies and Research	Assistant Dean for Research, School of Graduate Studies and Research,	VP for Administration and Finance	Dean of Graduate Studies and Research
Kutztown	Provost	Vice Provost	VP for Administration and Finance	Director, Office of Grants & Sponsored Projects
Lock Haven	Provost and VP for Academic Affairs	VP Finance & Administration	President	Grants Acquisition Coordinator
Mansfield	Provost & VP for Academic Affairs	Provost & VP for Academic Affairs	VP Finance and Administration	Dean, College of Arts & Sciences
Millersville	Associate Provost	Dean of Graduate Studies	Provost	Director Sponsored Projects and Research Administration
Shippensburg	Provost and Senior VP for Academic Affairs	Director of Purchasing & Contracting	Associate VP for Administration and Finance	Executive Director, Institute for Public Service
Slippery Rock	Provost and Vice President for Academic Affairs	Director of Grants & Sponsored Research	VP for Finance & Admin	Director of Grants & Sponsored Research
West Chester	Associate VP, Research and Sponsored Programs	Associate VP for Research and Sponsored Programs	VP for Admin & Finance	Associate VP for Research and Sponsored Programs

University Authorized Official (UAO)- Assists or designates other administrators to assist university personnel with patent disclosures, ownership determinations and conflict-of-interest issues related to technology transfer and entrepreneurial activities.

- Has a primary role in monitoring adherence to, and advising personnel on, State System and university procedures in these areas.
- Organizes or designates personnel to organize on-campus education and outreach efforts, including collaborative efforts with the Office of the Chancellor, such as information meetings on Technology Transfer matters, conflict-of-interest, and technology transfer aspects of outside activities.
- Makes the final determination to pursue patent filings and incur the costs associated with such action. Authorizes submission of Disclosures to the Office of the Chancellor and the Technology Transfer review and assessment process.
- Ensures faculty appointment letters contain references to the Guide.
- Consults with the Office of the Chancellor and university Legal Counsel on the more complex issues.

Designee to confirm Substantial Use – reviews an individual’s Invention Disclosure Form and determines if the amount and types of university resources is accurate. May have to consult with various university offices to do so. Documents the results on these confirmations. In the event of discrepancy between the inventor’s disclosure and the university records, presents finding to UAO.

Official to sign License Agreements – Must have contracting authority. They will subsequently monitor the receipt of license fees and royalties and distribute the revenue, or have authority to delegate and supervise these responsibilities.

Senior Sponsored Research Administrator – Ensures grant and contract approval routing forms contains language re inventions, disclosures and patents. Assist faculty with the Invention Disclosure and patenting processes. Ensure faculty sign the Intellectual Property Cooperation Agreement, *when required*. May receive delegations from the UAO. Frequently serves as the primary point of contact for the faculty inventors, and the Office of the Chancellor and represents the university in conversations/decisions regarding the patent process.

PART 2. For Employees, Contractors and Guest Researchers of State System universities:

Bloomsburg, California, Cheyney, Clarion, East Stroudsburg, Edinboro, Indiana, Kutztown, Lock Haven, Mansfield, Millersville, Shippensburg, Slippery Rock and West Chester Universities of Pennsylvania.

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*This Inventor's Guide for **Employees, Contractors and Guest Researchers is Part 2** of a three-part document. Part 1 of the Inventor's Guide provides comprehensive information on the Technology Transfer and Commercialization process within the State System universities inclusive of details that pertain only to faculty, who are the primary researchers and inventors on System campuses. When Part 1 specifically names "faculty", those statements may not apply to other employees, contractors, consultants and guest researchers. This **Part 2 supplements Part 1** and provides additional information that relates to unique issues that university employees, contractors, consultants and guest researchers who may perform research or development work that leads to inventions.*

This Part does NOT cover any student intellectual property created as part of an academic program. See Part 3 for such information.

The content of Part 2 was previously published in the "Technology Transfer and Commercialization Guide for PASSHE Non-Faculty Personnel", May 2009. It contains updates based on specific experience and university input over the years.

Overview

Readers should first review Part 1 of the Inventor's Guide. It provides information on the entire Technology Transfer and Commercialization process for inventors. Within the entire Part 1 the terms of the faculty's APSCUF Collective Bargaining Agreement are referenced often but these do not apply to non-faculty and student employees, or guest researchers, so this Part of the Inventor's Guide will address the differences for employees, contract employees, student employees, consultants and guest researchers, where they exist. However, Part 1 is the primary guide to the process and university services.

Applicability

WHO IS COVERED BY PART 2?

Covered individuals include the following individuals who utilize university resources and facilities:

- University staff, including managers, administrators and all other staff classifications (excluding clerical and non-technical personnel)
- Contract employees and consultants
- University students who are employed or otherwise compensated at their university through mechanisms such as stipends, tuition waivers, wage payroll, graduate assistantships, or other employment classifications used when hiring students, (excluding clerical and non-technical personnel).
- Guest researchers, such as emeritus or retired faculty, visiting scholars and scientists, and industrial research collaborators, that are using university facilities and who are not a permanent or temporary faculty, employee or student.
- **Excluded** from the above categories and from coverage are those individuals who are using university research facilities pursuant to a facility use agreement by which the university is compensated for use of the facilities, including equipment, personnel, and other costs.

ARE THERE ANY EXCEPTIONS TO THE APPLICABLE COVERAGE OF THESE GUIDELINES?

Exceptions may be necessary when the requirements of external sponsors or employers claim a share in ownership of intellectual property created using university resources, such as guest researchers who are fulltime employees of other institutions or businesses and collaborate on research with faculty or university employees. In those situations, the other party may have employment policies that apply to the guest. This is referred to as the "Other Employers" exception. In these cases, ownership of intellectual property resulting from the joint research is determined by a written agreement entered into prior to the collaboration. The creation of joint intellectual property involving guest researchers may bring a unique set of legal obligations with them.

WHAT TYPE OF INTELLECTUAL PROPERTY IS COVERED?

All intellectual property created by non-faculty employees, contractors and consultants, including student employees, during the course of normal and assigned duties, is covered by these guidelines.

Traditional **scholarly work** (such as, publications, works of art, recordings, and software) created by guest researchers (emeritus/retired faculty, visiting scholars/scientists and research collaborators) is **not covered**; however **inventions** made by these individuals with the use of university resources are **covered**.

The Inventor's Guide as a whole is primarily concerned with ownership and commercializing new technology and inventions that meet the definition of a patentable invention under the standards of the US Patent Law and are created by university faculty, employees and students.

WHO SIGNS THE EMPLOYEE INTELLECTUAL PROPERTY AGREEMENT?

Only university employees, including students, who work **in a capacity or position that could conceivably lead to an invention that qualifies for patent protection** sign an Intellectual Property Agreement. Such positions include researchers, software coders, science and technology lab assistants and research assistants. Employees in administrative and service jobs do not need to sign an Intellectual Property Agreement. This agreement assigns any patentable inventions to the university, should it decide to accept it. The Inventor's Guide Part 1 and Part 2, provides the procedures and services governing employee created inventions and patents.

The Agreement is signed upon the start of employment in the designated positions.

Ownership of Intellectual Property

WHO OWNS INTELLECTUAL PROPERTY CREATED BY COVERED PERSONS?

In simple terms the university owns any intellectual property created by non-faculty employees, including student employees, contract employees and consultants during the course of their normal and assigned duties. However a distinction between inventions and copyright work is important. If the intellectual property is employee/contractor/consultant created copyright work, then the university has outright ownership.

Contractor or consultant inventions can be handled the same as employees, predicated on a written agreement that addressed intellectual property ownership in a manner consistent with these guidelines.

The university may claim ownership of inventions made solely or jointly by all non-faculty employees, contractors and consultants, as a result of research or investigation which has made ANY use of university resources, support or facilities. Written agreements with contractors and consultants will address intellectual property ownership in a manner consistent with these guidelines.

The university's decision of claim of ownership is implemented in the following manner.

1. The university evaluates the invention in question in a fairly comprehensive manner **before** accepting assignment and investing in protection and commercialization. This evaluation will assess the commercial value, and the possibility and costs of patent protection for the invention. After evaluation the university may elect to not accept ownership and not file for patent protections.
2. The university achieves ownership of such inventions through legal assignment from the inventor(s) at the time the non-provisional patent is filed. The inventions are assigned to the university by the inventor(s) in exchange for licensing-revenue sharing plan between the university and the inventor(s).

The university's decision of ownership will not affect inventorship.

The ownership of scholarly work created by guest researchers (emeritus/retired faculty, visiting scholars/scientists and research collaborators) is owned by its creators; however inventions made by these individuals with the use of university resources will be owned by the university unless a prior written agreement is negotiated otherwise or the exception for "other employers" applies.

WHAT TYPE OF INTELLECTUAL PROPERTY IS MOST COMMONLY CREATED BY EMPLOYEES?

Much of the intellectual property that you create as part of work duties are works of authorship that are covered under copyright protections, such as reports, presentations, databases and software code. The university's Tech Transfer services do not typically make any effort to protect copyright works because taking legal steps to do so is usually unnecessary. However, student employees who are working with faculty as research assistants may create or co-create inventions. In addition, deans of the university may have research grants that are administered by the

university that could possibly result in inventions. Their inventions are handled as described above: evaluation, assignment, patenting, licensing and revenue sharing.

Copyright is discussed more thoroughly in Part 1.

WHAT IS WORK FOR HIRE?

Work-for-Hire is a concept defined in the US. Copyright laws. Most if not all intellectual property created by non-faculty employees, contractors and consultants will fall within this category. A work for hire includes works that are: (1) prepared by an employee within the scope of his or her employment; or (2) specially ordered or commissioned by the university. It only covers the types of intellectual property that can be protected by copyright, i.e. "works of authorship".

As the employer the university retains the copyright of all employee created works of authorship as works-for-hire, but may grant the creator permission for limited use of material. Specific Work-for-hire agreements are NOT necessary to secure university ownership of works created by non-faculty employees. Contractors and consultants have to execute the appropriate agreement that releases copyright to the university prior to the start of work. The agreement typically takes the form of Service Purchase Contracts. However, other forms may be acceptable as long as they contain an assignment of intellectual property.

DOES THE UNIVERSITY HAVE ANY OTHER STANDARDS THAT RELATE TO INTELLECTUAL PROPERTY?

Non-faculty employees, contractors and consultants, and guest researchers may not use university copyright material or other intellectual property owned by or assigned to the university without specific permission. For example, employees cannot use the university's logo for personal activities.

WHAT IF A STUDENT WORKS "FOR FREE" IN A UNIVERSITY LABORATORY OR RESEARCH PROJECT TO GAIN EXPERIENCE?

If the student is not receiving compensation they are covered under the guidelines in Part 3. If students are receiving no pay or compensation and imposing no costs on the university by receiving assistance or faculty collaboration, the Intellectual Property will be owned by the student. However, if this student is receiving "material support" from the university, or collaborating with faculty or participating in a "special situation" in a for-credit course, then the university or a third party has rights to the Intellectual Property. This is covered in detail in Part 3.

WHAT IF I CREATE AN INVENTION ON MY OWN TIME?

If the invention is totally unrelated to your employment responsibilities and is created wholly on your own time, and without the use of university facilities, it MAY belong to you. Each situation will be disclosed by the employee and examined by the university.

Your "own time" means time other than that required to fulfill the normal and assigned functions of your position with the university, including hours outside of normal business hours. "university facilities" means use of any facility available to the inventor-employee as a direct result of the inventor's affiliation with the university (including computing facilities and networks), or any facility available under the university's policies on co-operative use of research equipment, or policy on use of facilities by emerging technology enterprises, and which would not otherwise be available to a non-university employee. However, inventions created on one's "own time" without use of "university resources" does not include inventions that are based upon or derived from intellectual property that the university owns or to which it has a potential ownership claim.

WHAT IF I CREATE COPYRIGHTED WORK ON MY OWN TIME?

In pursuit of outside interests, university employees may create any number of copyright works on their "own time" as described above, such as books, music, artistic works, or software. As long as the work is not part of the employee's normal or assigned university duties, then s/he owns the work outright. However employees may not use university intellectual property in their own works without specific permission.

Inventions & Technology Disclosures

WHAT HAPPENS IF AN EMPLOYEE OR OTHER COVERED INDIVIDUAL CREATES AN *INVENTION*?

The overall process utilized by employees, contractors and consultants as well as guest researchers is the same process that is described in Part 1.

WHEN SHOULD EMPLOYEES, CONTRACTORS AND CONSULTANTS COMPLETE AN INVENTION AND TECHNOLOGY DISCLOSURE?

You should complete an Invention and Technology Disclosure whenever you feel you have discovered something unique with possible commercial value. The form and the process of Disclosure for employees, contractors, consultants is the same as that used for faculty as described in Part 1.

Unlike faculty, there are no exclusions from Disclosure of Inventions. All inventions by employees, contractors and consultants and guest researchers must be disclosed,

WHEN SHOULD GUEST RESEARCHERS COMPLETE AN INVENTION AND TECHNOLOGY DISCLOSURE? HOW IS THEIR DISCLOSURE PROCESSED?

You should complete an Invention and Technology Disclosure whenever you feel you have discovered something unique with possible commercial value. You should review Part 1 about the criteria for an invention and consult with university officials if you have any questions.

Guest researchers (emeritus/retired faculty, visiting scholars/scientists and research collaborators) also file a Disclosure or sign the Disclosure filed by the collaborating faculty inventor or employee inventor. They will identify their institutional affiliation, if any. The university will confirm if their employer has any claim to the invention. There may be other employer claims on the guest's invention as well as the university rights. If so, the university will develop an Inter-Institutional Agreement and work co-operatively with the other party to legally protect the invention through patenting.

In the case of industry research collaborators, there typically is a research agreement negotiated prior to the research that indicates the disposition of inventions and identifies "background intellectual property", i.e. that intellectual property that each party brought to the research and to which the other party can make no claim. Without such an agreement, the process of determining ownership of any invention is extremely complicated.

Guest researchers need not disclose traditional scholarly work, such as publications, works of art, recordings, and software that is created while using university resources for research.

IS THE INVENTION EVALUATION PROCESS?

The invention evaluation process is described in detail in Part 1 of the Inventor's Guide and rests on two keys questions: Is the invention patentable, i.e. can it legally be protected with a patent issued by the US Patent and Trademark Office? Is the invention commercially useful, i.e. does it address a public need and market demand? Inventions typically arise out of student research in scientific, engineering and technological disciplines. Review Part 1 for details in the Technology Disclosure section.

License Agreements

WHAT IS THE RELATIONSHIP BETWEEN AN EMPLOYEE INVENTOR AND A LICENSEE?

An employee's involvement with a licensee cannot be a formal role or paid role. However, licensees may seek to consult an inventor to better understand the technology and such conversations are not only acceptable, but encouraged.

Start-Up Companies/ Conflict of Interest

WHAT IF EMPLOYEES WANT TO COMMERCIALIZE SOFTWARE THAT THEY DEVELOPED FOR THE UNIVERSITY?

University employees, contract employees and consultants may develop software to meet the needs of the university. Such software is a work for hire, covered by Copyright laws and is owned by the university. Should the university wish to commercialize the software, it may do so. Employees, contract employees and consultants are not free to undertake any commercialization of software or other work product.

CAN I PARTICIPATE IN A START-UP COMPANY THAT LICENSES THE UNIVERSITY-OWNED INTELLECTUAL PROPERTY THAT I CREATED AS PART OF MY JOB?

Yes, it is possible for employees of the State System to be an owner, employee, officer, agent or consultant of a company that signs a license agreement with your university as described in the Start-up Companies section of Part 1, including the conflict of interest provisions. Contractors and consultants can act similarly. They may be part of a company that licenses university-owned inventions, copyrights and trademarks.

CAN STUDENT EMPLOYEES COMMERCIALIZE INTELLECTUAL PROPERTY THAT THEY DEVELOPED FOR THE UNIVERSITY AS PART OF THEIR JOB?

When student employees are paid to produce the intellectual property as part of their normal and assigned duties, they are treated as any other employee (see above) as long as the student is employed with the university. If students want to commercialize any intellectual property they created *after* they end their employment with the university, the university could enter into agreements to do so *after the student ends their employment* with the university.

In evaluating a student's request to undertake this effort, the university applies the same criteria applied to employees who create a start-up company. The university considers the students' ability to successfully form a company and take the product to the market. Refer to the Start-up Companies section in Part 1 for additional guidance.

Royalty Distribution

ARE THERE UNIQUE TERMS FOR DISTRIBUTION OF ROYALTIES TO EMPLOYEES, CONTRACTORS OR CONSULTANTS?

Yes. University faculty have collective bargaining rights that define the distribution of net revenues resulting from successful commercialization of an invention (or other intellectual property).

Other university employees, contractors and consultants do not have the same rights. The university can establish a policy on the division of net revenues and it can amend that policy from time to time. The university can set one policy for employees and another policy for contract employees or consultants.

In the case of guest researchers, the guest may be covered by the policy of their own employer. If the guest researcher is a retired faculty member, then the university can establish a policy or negotiate the division of net revenues.

PART 3. For Students of State System universities:

Bloomsburg, California, Cheyney, Clarion, East Stroudsburg, Edinboro, Indiana, Kutztown, Lock Haven, Mansfield, Millersville, Shippensburg, Slippery Rock and West Chester Universities of Pennsylvania.

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The "Technology Transfer and Research Commercialization Network" was first established in 2009 as a partnership of System universities, Office of the Chancellor, and Penn State Research Foundation (PSRF). The partnership provides the services of Technology Licensing Officers, docket clerks, and specialized patent counsel of PSRF to system universities at a very reasonable, pay-as-you-go cost. The Office of the Chancellor is the System's coordination point between the universities and PSRF, and vice versa. Universities may utilize their own staff in lieu of PSRF services, but regardless of which service model is deployed at any individual system university, the inventor's first point of contact is a key administrator within their university.

The goal of Technology Transfer in the System is to achieve protection of new technology (through patenting) and facilitate availability of the technology to industry and the public either through licensing with existing ventures or facilitating start-up ventures.

This *Inventor's Guide for Students* is Part 3 of a three-part document. Part 1 of the *Inventor's Guide* provides information on the Technology Transfer and Commercialization process within the State System universities inclusive of details that pertain only to faculty, who are the primary researchers and inventors on System campuses. This **Part 3 supplements Part 1** and provides additional information that relates to unique issues student will encounter, including academic work.

The content of this booklet was previously published in the "Technology Transfer and Commercialization Student Guide", October 2009. It contains updates based on specific experience and university input over the years.

Overview

Readers should first review the Overview section of Part 1 of the Inventor's Guide. It provides information on the entire Technology Transfer and Commercialization process for inventors. The terms of the faculty's APSCUF Collective Bargaining Agreement, which is referenced there many times, does not apply to students, so this Student Inventor's Guide will address the differences, where they exist. However, Part 1 is the primary guide to the process and University services.

Ownership of Intellectual Property

Student Employees

WHO OWNS THE INTELLECTUAL PROPERTY THAT I CREATE AS PART OF MY WORK DUTIES WHEN EMPLOYED BY THE UNIVERSITY?

If you, as a student are working in a paid position for the university, including any type of compensation like stipends or conditional tuition waivers, you are covered by the same Intellectual Property requirements that apply to all State System non-faculty employees. These guidelines are outlined in Part 2 of the Inventors Guide. Employees include all students working for pay or compensation, including sponsored projects, work-study, graduate assistants, work-for-hire arrangements and other classifications. Please note university ownership does not affect your potential standing as an inventor, or your right to royalties.

WHICH STUDENTS EMPLOYEES SIGN THE EMPLOYEE INTELLECTUAL PROPERTY AGREEMENT?

Students employed by the University in a capacity or position that could conceivably lead to an invention are required to sign an Intellectual Property Agreement. Such positions include science and technology lab assistants and research assistants. Student employees in service jobs do not need to sign an Intellectual Property Agreement. This agreement assigns any patentable inventions to the University, should it decide to accept it. The Inventor's Guide Part 1 and Part 2, provides the procedures governing employee created inventions and patents.

WHAT IF A STUDENT WORKS "FOR FREE" IN A UNIVERSITY LABORATORY OR RESEARCH PROJECT TO GAIN EXPERIENCE?

If students are receiving no pay or compensation and imposing no costs on the university by receiving assistance or faculty collaboration, the Intellectual Property will be owned by the student. However, if such a student is receiving "material support" from the University, or collaborating with faculty or participating in a "special situation" in a for-credit course, then the University has rights to the Intellectual Property. A visiting student from an external secondary or post-secondary institution who performs research in a university lab under the mentorship of a university faculty member is a situation that constitutes material support and the university will claim ownership of inventions arising from that research, unless a prior agreement has been signed between the university and external institution.

HOW DOES WORK-FOR-HIRE APPLY TO STUDENTS?

Work-for-hire is a concept embodied in US copyright law and applies only to intellectual property that can be protected by copyright. In a typical work-for-hire agreement or arrangement, the university commissions a student, or group of students, to undertake a work, for which the University retains all intellectual property rights, i.e. the university requires that it receives ownership and future use of the intellectual property. Examples include: hiring a student to take photographs at a university event, commissioning graphic arts students to design an event poster, engaging students to write a software program. The student may be compensated or not compensated. The concept applies to all employed students, but it also can apply on a case by case basis to students who provide intellectual property to the university on a volunteer basis. A work-for-hire agreement can be signed by the university and student or the student could waive or assign students intellectual property rights as a condition of participating. Work-for-hire **never** applies to academic work.

HOW DO SPONSORED AGREEMENTS APPLY TO STUDENT EMPLOYEES?

When a student is employed on a sponsored research project, then the terms of ownership of intellectual property are typically covered by the terms and conditions of the sponsor's funding agreement. Terms vary by the nature of the sponsor with federal agencies requiring conformance with the Bayh-Dole Act, which covers inventions but no other intellectual property (see section 1), and industry sponsors that often reserve some rights to themselves. If the sponsored agreement is silent on ownership of intellectual property then the procedures and standards of Part 1, 2 and 3 of this document will apply.

Academic Work

WHO OWNS THE INTELLECTUAL PROPERTY THAT I CREATE AS A STUDENT AS PART OF MY COURSEWORK?

The University respects the long-standing tradition that students own their academic work. Generally, undergraduate and graduate students own any Intellectual Property that they create as part of coursework for academic credit. Intellectual Property such as theses and dissertations, inventions, discoveries, creations and new technologies that are conceived or first reduced to practice by a student at a State System University as a work product (including homework assignments, laboratory experiments, special and independent study projects) of a "for credit" course will be owned by the student. The University does not claim ownership of such Intellectual Property.

WHAT TYPE OF INTELLECTUAL PROPERTY IS MOST COMMONLY CREATED IN COURSEWORK?

Much of the intellectual property that you create as part of coursework are works of authorship that are covered under copyright protections, such as papers, artwork and software code. The University's Tech Transfer services do not typically assist creators in protecting their copyright works because taking legal steps to do so is usually unnecessary.

WHAT IS A COPYRIGHT AND HOW IS IT USEFUL?

Copyright is a form of protection provided by the laws of the United States to the authors of "original works of authorship." This includes computer software, literary and artistic works such as novels, poems and plays, films, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs. This protection is available to both published and unpublished works. The Copyright Act generally gives the owner of copyright the exclusive right to conduct and authorize various acts, including reproduction, public performance and making derivative works. Copyright protection is automatically secured when a work is fixed into a tangible medium such as a book, software code, video, etc.

ARE THERE EXCEPTIONS TO MY OWNERSHIP OF MY ACADEMIC WORK?

Yes. There are exceptions to a student's ownership of their academic work. The exceptions are:

1. When the University provides "material support" for student research and academic credit work, which is beyond the standard provided to all students.
2. When the student collaborates with faculty or staff as part of research or artistic work (including academic credit) at a level beyond the standard provided to all students.
3. When there is a "special situation" in for-credit courses where the Intellectual Property is created at the request of the University or a third-party which requires the intellectual property be assigned or licensed to it as a condition of the student's participation.

Exceptions 1 and 2 also apply to non-credit research and creative activities.

WHAT IS MATERIAL SUPPORT BEYOND THE STANDARD?

Material support for student academic research will mean that for the project that produced the Intellectual Property the creator (student) received staff, salary or facility support beyond the standard resources provided to a student in the University. The term must be defined in comparison to the usual level of support provided to all students within a department or discipline. The definition may vary from one discipline to another. The determination must be made

by the department or division head, subject to the affirmation of the dean. Is a question arise about whether support is beyond the standard, then a written statement will be obtained from the unit leader (department or division head, dean, director, etc.) concerning the level of use of University support and facilities.

The university may develop additional standards for implementing or waiving this exception. Please contact your Provost Office for more information on your university's requirements. For example the university could waive the exceptions for specific undergraduate research grant programs or for specific types of student intellectual property such as non-patentable intellectual property,

When exercising the university rights under the exception, the university evaluates the Intellectual Property resulting from such projects and determines if it wishes to exercise assignment or licensing from the students in order to legally protect and commercialize the intellectual property, or utilize it within the university business operations, research or education functions. The university may ultimately decline to accept an assignment or a license.

WHAT IS COLLABORATION WITH FACULTY OR STAFF BEYOND THE STANDARD?

A student and faculty working together that goes beyond the standard for an undergraduate or graduate student at a State System University. The term must be defined in comparison to the usual level of support provided to all students within a department or discipline. The definition may vary from one discipline to another. The determination must be made by the department or division head, subject to the affirmation of the dean. Collaboration may take the form of a student assisting faculty with research or creative activities. It may take the form of students and faculty working together to develop an exhibit or production of works of art, outside of for-credit courses. It does *not* include independent study courses taken for credit. It does *not* include work for pay or other compensation under the guidance of a faculty or staff person. Should a question arise about whether collaboration is beyond the standard, a written statement will be obtained from the unit leader (department or division head, dean, director, etc.) concerning the level of collaboration.

The university may develop additional standards for implementing or waiving this exception as explained on page 7 under the topic of Material Support. Please contact your Provost Office for more information on your university's requirements.

WHAT IS MEANT BY 'SPECIAL SITUATION'?

Special Situation is a project or activity that is part of a for-credit course where students are presented with the opportunity to participate, in which the ownership of any resulting Intellectual Property must be assigned either to the University or to a sponsoring entity (such as a company) as a condition of the student's participation. It is a class project or activity that is commissioned by the university or a third-party to students to undertake for course credit. The university may plan to use the resulting intellectual property in its operations, and private sponsors may wish to limit publications of intellectual property that describes their proprietary operations. The need to assign intellectual property, e.g. software or musical and artistic works to the university or third-party will be made known to the students prior to the start of the project/activity.

HOW DOES THE UNIVERSITY CONFIRM MATERIAL SUPPORT, OR COLLABORATION BEYOND THE STANDARD OR SPECIAL SITUATIONS THAT STUDENTS MAY ENCOUNTER?

The university sets its own standards for implementing or waiving these exceptions. When the university implements these exceptions, i.e. when it does **not** waive the exception, it will advise both faculty and students of the implementation protocols including reporting or confirming use of university resources and special situations. The university may waive the exceptions programmatically or by type of intellectual property as described above.

WHAT DO THESE EXCEPTIONS MEAN TO MY STANDING AS AN AUTHOR OR CREATOR?

Very Little. It does not change your standing as a credited author/creator/inventor. The work is still part of your academic portfolio. In the above Exceptions, the University (or a third-party) will have a right to use the Intellectual Property for its own purposes, such as business operations. If they wish to do so, you will be asked to sign a release

which states the parameters on university or third-party use, and/or limit your individual use of the work. If the Intellectual Property constitutes a patentable invention (see Part 1, Patent section, the university will have the legal standing or control that it requires in order to invest in the costly patent protection process.

WHEN AN EXCEPTION REQUIRES A STUDENT TO ASSIGN OR LICENSE INTELLECTUAL PROPERTY, HOW IS THAT ACCOMPLISHED?

Initially, the University will evaluate the nature of the intellectual property that is being created. The university will consider, among other things, the need for legal protection and the public demand or other users (including the university itself) need for the intellectual property. If the assignment or licensing proceeds, then a written agreement is developed to deal with the specific situation requiring assignment or licensing to the university or third-party. Course faculty work with their Deans or other university officials to identify the occurrence of an exception. The University officials then develop the agreement with guidance from University Legal Counsel and the System's Technology Transfer Coordinator. The appropriate agreement is signed by the student at the initiation of the project or activity or as soon as the need for such an agreement is evident.

ARE GRADUATE STUDENTS DIFFERENT FROM UNDERGRADUATE STUDENTS?

Generally no. If graduate or undergraduate students are doing any research (including but not limited to research for graduate thesis or dissertation preparation), and do not receive material support from the University or involve Faculty collaboration, then the Intellectual Property belongs to the student.

WHAT ABOUT UNDERGRADUATE THESES?

For required senior thesis, or seminar with a research component, the student must have available an option that allows them to retain their Intellectual Property. That is, an option that allows them to complete the work *without* material support or faculty collaboration beyond the standard. This may require a change in topic.

WHAT ABOUT GRADUATE THESES OR DISSERTATIONS?

The student must have available an option that allows them to retain their Intellectual Property. That is, an option that allows them to complete the work *without* material support or faculty collaboration beyond the standard. This may require a change in topic.

If the student receives material support from the University and the outcome of a graduate thesis or dissertation is a *patentable invention*, then the University has rights to the invention, which after evaluation, it may or may not exercise. When a patentable invention is a *foreseeable possibility* in this situation, the student signs a **Student Intellectual Property Agreement with the University** at the first meeting of the project or course or as soon as the need becomes apparent.

DOES ACCEPTING FINANCIAL AID FROM THE UNIVERSITY HAVE ANY IMPACT ON OWNERSHIP OF MY INTELLECTUAL PROPERTY?

The acceptance of financial aid loans and grants has no impact on Intellectual Property. However, work-study and paid university internships qualify as employment and the employee guidelines of Part 2 will apply to intellectual property created as part of your employment duties.

DOES ACCEPTING A GRADUATE ASSISTANT POSITION FROM THE UNIVERSITY HAVE ANY IMPACT ON OWNERSHIP OF MY INTELLECTUAL PROPERTY?

Yes. A Graduate Assistant position is compensated and Intellectual Property created as part of your employment duties or within the scope of the position of the GA are covered under the employee guidelines of Part 2.

WHAT ABOUT SUMMER STUDENTS OR STUDENT INTERNS, BOTH AT A SYSTEM UNIVERSITY AND AT OTHER INSTITUTIONS?

Summer students and student interns at the State System University and State System students at other institutions must abide by the policies of the host institutions, including signing any appropriate Intellectual Property agreement for the host institution.

WHAT ABOUT ARTISTIC WORKS CREATED BY STUDENTS AS PART OF COURSEWORK?

All rights of artistic work, including poetry, sculpture, graphic arts, painting, music, choreography, etc., created as part of academic required coursework rest with the creator. When an exception applies an Intellectual Property is assigned or licensed to the University or to a third-party.

WHAT ABOUT SOFTWARE CODE CREATED BY STUDENTS AS PART OF COURSEWORK?

Like other Intellectual Property that is fixed in tangible form, software code is copyright work. When created as part of coursework it belongs to the student. When an exception applies, the Intellectual Property is assigned or licensed to the University or to a third-party.

WHAT ABOUT 'SPECIAL SITUATIONS' WHERE STUDENTS DEVELOP DESIGN CHANGES OR PROBLEM SOLVING IN CASE-BASED LEARNING ON PROBLEMS SUBMITTED BY COMPANIES?

If students develop Intellectual Property in solving a project in a "for credit" course using case-based learning based on externally-submitted (company, institute, or non-profit) problems, and:

- a. there is no agreement to the contrary, then the Intellectual Property belongs to the students.
- b. sponsors want to control Intellectual Property rights, then students can assign or license their rights by signing an appropriate agreement. A **Student Intellectual Property Agreement with a Company Sponsor** should be signed at the initiation of the project or activity.
- c. When required to assign their intellectual property rights, then it is the student's choice to participate in projects and students must have options that allows them to complete alternate assignments for equal credit.

WHAT ABOUT SITUATIONS WHERE THE ORIGINAL IDEA FOR A STUDENT THESIS OR DISSERTATION COMES FROM THE FACULTY?

It is possible that situations will arise when a faculty and a student are co-authors or co-inventors. In a case of *co-inventorship*, a faculty member and a student will be guided individually by the set of guidelines that apply to them. It's conceivable that the student will be required to assign his/her share of ownership rights, but the faculty may be allowed to retain their share of ownership. It is difficult to commercialize such an invention, so the University will explore options to simplify the matter. The University will have the option to return the student's rights to the student, thus allowing the faculty and student to move forward privately without University support for patent costs. Another option in this case is for the faculty to voluntarily assign ownership to the University so that the University may submit the invention disclosure to the Technology Transfer process for evaluation as described in Part 1 of the Inventor's Guide and incur the costs associated with protecting and commercializing the invention.

WHAT ABOUT A STUDENT FROM ANOTHER POST-SECONDARY, OR SECONDARY, INSTITUTION WHO IS DOING RESEARCH IN UNIVERSITY FACILITIES UNDER THE MENTORSHIP OF UNIVERSITY FACULTY?

Such a visiting "student" researcher is receiving material support and faculty collaboration beyond that normally provided to the university's own students *and* the university is receiving no compensation from the "student" for use of the facilities or faculty time. Therefore the university can claim ownership of the student's share of any invention arising from the research. The university will seek an assignment from the student in exchange for a share in future licensing revenue distributed to the student. Without such an assignment the university may decline to pursue patent protection for the invention.

WHAT KEY POINTS DO FACULTY MEMBERS NEED TO KNOW ABOUT STUDENT INTELLECTUAL PROPERTY RIGHTS?

Generally, undergraduate and graduate students own any Intellectual Property that they create through coursework for academic credit. Exceptions are:

- 1) When there is collaboration beyond the standard level between a student and University faculty or staff to create works as part of research or development activities, including non-credit efforts, Intellectual Property will be owned by the University.
- 2) When the student receives material support beyond the standard level provided by the University to students, including non-credit efforts, Intellectual Property will be owned by the University.
- 3) Special Situations may occur in individual courses or projects where students are presented with the opportunity to participate in projects or activities in which the ownership of any resulting Intellectual Property is assigned or licensed to the University or to a third party as a condition of the student's participation. **Student Intellectual Property Agreement Forms** are available to deal with all of the situations requiring assignment, or notification of the sponsors of the research.

WHAT IF I, AS A STUDENT, FEEL MY FACULTY ADVISOR HAS A CONFLICT OF INTEREST IN MAKING 'SPECIAL SITUATION' ASSIGNMENTS TO ME AND MY CLASSMATES?

If a student believes there is a conflict with a faculty instructor or advisor, a student should consult with the Dean or the Provost. An example of a Conflict of Interest is when a faculty member assigns coursework as defined as a Special Situation that benefits a private company in which the instructor, or an immediate family member, has a financial interest.

Inventions

WHAT IF THE STUDENT MAKES AN *INVENTION* IN A COURSE THEY ARE TAKING?

If any student, graduate or undergraduate, taking any course for-credit develops Intellectual Property as part of the required coursework, the Intellectual Property belongs to the student *unless one of the three exceptions (previously described) applies*. When an exception applies, the university or third-parity will have ownership rights.

When a students has outright ownership and student wants to explore protecting and commercializing the invention using the university Technology Transfer process as described in Part 1, and the University is willing to sponsor the costs of doing so, then the student must assign the invention and patents to the University. The University will evaluate the intellectual property prior to accepting the assignment and undertaking the other steps as explained in Part 1.

HOW DOES PUBLISHING AFFECT PATENT RIGHTS?

Any public disclosure, such as a publication, presentation, thesis or dissertation, and thesis or dissertation defense, has an impact on patenting. Students retain the right to publish and present, unless limited by sponsorship agreements. Institutions' and academic programs' respective policies /guidelines for completion of theses and dissertations should address how public defense, open presentation, and publication of theses and dissertations will be reconciled with the need to safeguard against risk of disclosure or loss of protection of patentable concepts and materials. By keeping the university well informed of upcoming public disclosures, the university can formulate an appropriate patent strategy that minimally impacts publications and presentations.

Student Research

THE UNIVERSITY PROVIDES SMALL GRANT AWARDS TO STUDENTS FOR UNDERGRADUATE RESEARCH. THE RECIPIENT STUDENTS RECEIVE FUNDING, USE LAB SPACE AND USE FACULTY'S TIME. IS THIS A LEVEL OF RESOURCES NOT NORMALLY AVAILABLE OR WOULD IT BE CONSIDERED NORMALLY AVAILABLE SINCE ANY STUDENT CAN APPLY?

Yes, this is an example of material support beyond the standard because it is a grant that very few students receive and because the students work closely with faculty in a way not normally available to all students.

The standards for the exceptions of student ownership that are triggered by material support and faculty collaboration apply both to academic work and non-credit research. These exceptions are as previously stated on page 7. A visiting "student" from an external secondary or post-secondary institution who performs research, whether sponsored or not, in a university lab under the mentorship of a university faculty member is a situation that constitutes material support and the university will usually claim ownership of inventions arising from that research.

Under these exceptions the university has rights to the intellectual property, which it may choose to exercise or waive. The university develops standards for implementing or waiving the exceptions.

HOW DO SPONSORED AGREEMENTS APPLY TO STUDENT RESEARCH?

The university may rely on an external sponsor to fund undergraduate or graduate research. In such cases, the terms of ownership of intellectual property are typically covered by the terms and conditions of the sponsor's funding agreement. Terms vary by the nature of the sponsor with federal agencies requiring conformance with the Bayh-Dole Act which covers inventions but no other intellectual property (see section 1), and industry sponsors that often reserve some rights to themselves. If the sponsored agreement is silent on ownership of intellectual property then the procedures and standards of Part 1, 2 and 3 of this document will apply.

University Rights

WHEN DOES THE UNIVERSITY HAVE RIGHTS TO STUDENT ACADEMIC AND RESEARCH WORK?

Under the three exceptions outlined in this Part the University reserves a right of ownership which, after evaluation, it may choose to accept or may choose not to exercise.

WHAT RIGHTS DOES THE UNIVERSITY HAVE TO MY INTELLECTUAL PROPERTY?

The University will have those rights that are defined in a written agreement with the student that is normally signed prior to the start of the academic or research project (or as soon as it is known that the exceptions have been triggered). The University rights may vary depending on the nature of the project or activity and the resulting intellectual property. With copyright works, the University may reserve an exclusive right to use the work in its operations and programs. Or, it could opt for non-exclusive rights, thus allowing the student to commercialize the intellectual property. With patentable inventions, the University may elect to take ownership of the patent, which includes the legal right to license the invention to third-parties for commercial use and to protect the invention from infringement by others.

WILL THE UNIVERSITY JUST "TAKE" MY INTELLECTUAL PROPERTY IF IT HAS "RIGHTS" TO IT?

No. The University's rights to use your intellectual property are outlined in an agreement with you. In fact, the University evaluates the intellectual property in question before accepting ownership and it may determine it does not want ownership, even if it has some rights to it. This evaluation may be relatively simple for copyright works or fairly comprehensive for inventions.

The invention evaluation process is described in detail in Part 1 of the Inventor's Guide (in the Invention & Technology Disclosures section) and rests on two key questions: Is the invention patentable, i.e. can it legally be protected with a patent issued by the US Patent and Trademark Office? Is the invention commercially useful, i.e. does it address a public need and market demand? Inventions typically arise out of student research in scientific, engineering and technological disciplines.

The evaluation of copyright work can be more forthright, with a key issue being if the work is useful in the university's business operations, such as a marketing campaign or software program. If this is true, then the University will need clear ownership rights and may require the student to waive all or some rights as a condition of commissioning or accepting the work.

In both the case of inventions or copyright work, the university may waive any right to ownership of the intellectual property, based on its evaluation of the intellectual property.

DEFINITIONS

Collaboration with faculty or staff

A student and faculty working together that goes beyond the standard for an undergraduate or graduate student at a State System university. The term must be defined in comparison to the usual level of support provided to all students within a department or discipline. The definition may vary from one discipline to another. The determination must be made by the department or division head, subject to the affirmation of the dean. Collaboration may take to the form of a student assisting faculty with research or creative activities. It may take the form of students and faculty working together to develop an exhibit or production of works of art, outside of for-credit courses. It does **not** include independent study courses taken for credit. It does **not** include work for pay or other compensation under the guidance of a faculty or staff person. Should a question arise about whether collaboration is beyond the standard, a written statement will be obtained from the unit leader (department or division head, dean, director, etc.) concerning the level of collaboration.

Material Support for Student Academic Research

Material support for student academic research will mean that for the project that produced the Intellectual Property the creator received staff, salary or facility support beyond the standard resources provided to a student in the university. The term must be defined in comparison to the usual level of support provided to all students within a department or discipline. The definition may vary from one discipline to another. The determination must be made by the department or division head, subject to the affirmation of the dean. Should a question arise about whether support is beyond the standard, a written statement will be obtained from the unit leader (department or division head, dean, director, etc.) concerning the level of use of university support and facilities.

Special Situation

Projects or activities that are part of a for-credit course where students are presented with the opportunity to participate, in which the ownership of any resulting Intellectual Property must be assigned or licensed either to the university or to a third-party entity (such as a company) as a condition of the student's participation.

Student Intellectual Property Agreement Forms

Such forms can be tailored for individual situations. Some examples are available for administrators at www.passhe.edu/techtransfer or by contacting the System Technology Transfer Coordinator or University legal counsel.