Idea
Penn Faculty and Innovation Community
Protecting your discoveries

What is a discovery?
What type of discoveries?
Why protecting them?
How can we protect these discoveries?
Discoveries:
mechanism of action
function of a protein, RNAi, etc…
small molecules, Ab, nucleotides, …
method of use
process
device
…

Why protecting discoveries?

-to increase the potential impact one’s discovery can have
-allow investments to further develop the technologies
To be patentable, an invention must be:

- novel, non-obvious, useful,
- enabled, described, work of inventors,
- patentable subject matter, directed at statutory subject matter.

1. Novel – Not known, published, used publicly, or offered for sale more than one year prior to the filing date.

2. Non-Obvious – Not obvious to “one of ordinary skill in the art”.

3. Useful – Has to have a specific and substantial utility

4. The following are patentable:
   1. Process
   2. Machine
   3. Article of manufacture
   4. Composition of matter
   5. Improvement of any of the above

Note: In addition to utility patents, encompassing one of the categories above, patent protection is available for (1) ornamental design of an article of manufacture or (2) asexually reproduced plant varieties by design and plant patents.
What is NOT Patentable?

- Laws of nature
- Physical phenomena
- Abstract ideas
- Inventions which are:
  - Not useful (such as perpetual motion machines);
  or
  - Offensive to public morality

- Literary, dramatic, musical, and artistic works (these can be Copyright protected).
A patent allows the owner of the patent to exclude others from making, using, selling, importing products and methods covered by the claims for a period of 20 years from the filing date of the first non-provisional patent.
Copyright is a form of protection provided by the laws of the United States (title 17, U. S. Code) to the authors of “original works of authorship,” including literary, dramatic, musical, artistic, and certain other intellectual works, (including software).

This protection is available to both published and unpublished works.

- Copyright protection subsists from the time the work is created in fixed form for the author’s life plus 70 years.
- The copyright in the work of authorship immediately becomes the property of the author who created the work.
- Only the author or those deriving their rights through the author can rightfully claim copyright.
Discoveries – Which ones to pursue?

What is the problem addressed?

What would be the best path of protection:
- Patenting (is it patentable? enforceable?)
- Copyright
- Proprietorship
- Know-How
- Trade Secret?

Who are the customers (users)?

Commercialization:
- Do you need additional technologies
- Regulatory path
- Manufacturing
- Cost of the final product
- Reimbursement
- Competition – advantages
Your innovation in action

**INVENTION**
Research paths to an invention can be supported by Penn, government grants, and corporate partnerships.

**DISCLOSURE**
An inventor uses Inventor Portal to disclose, so PCI can protect the invention and create a plan for commercialization.

**ASSESSMENT**
An assigned Technology Licensing Officer assesses commercial value and begins marketing efforts to industry partners.

**What is the product?**
**What is the problem solved?**

**Let’s talk**

**Is there a there?**
PROTECTION

Disclosures with commercial potential are protected through various channels (patents, copyright, trademarks, trade secrets, and/or know-how).

COMMERCIALIZATION

PCI and the inventor determine the best strategy, which may include licensing to industry, starting a company, or pursuing a corporate partnership.

MARKETING

PCI identifies potential clients and partners, creates marketing collateral, and lists the technology on their website. PCI may also market through programs and events, print and web media.

What is the best path forward

Licensing
Start up
Further development

Summary
What should be disclosed and when?

• **Required** for any potentially patentable invention or discovery according to the Penn Patent Policy.

• **Encouraged** for all other inventions and developments that you feel may solve a problem and/or have value

• Should occur well before publicly presenting the discovery through abstracts, poster sessions, conferences, publications, press releases, or other communications

• Disclose early and often!
How to start the commercialization process

• Disclosure: Inventor Portal
  – Faculty, staff, and students
  – Create, edit, and submit invention disclosures online
  – Check status of submitted invention disclosures
  – Check status of patent applications
1. Distribution of Adjusted PCI Revenues
   - Gross PCI Revenues minus Initial Deduction
2. Inventor’s Personal Share
   - Quarterly to Inventors > $ 5,000
3. Inventor’s Research Activity Share
   - Quarterly to Inventor’s Research Activity
4. “Other”
   - Recovery of Annual PCI Operating Costs
   - Distribution to Department of Inventor’s Share
   - Distribution to School of Inventor’s Share
   - Distribution to University Research Share

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1 For a hypothetical illustration of the distributions set forth in Sections 2.3.1 and 2.3.2, see Appendix C of the Penn Patent Policy.
2 Penn authorized a reduction in the current Initial Deduction under the distribution formula of the Penn Patent Policy for the current rate of 14.5% to a new lower rate of 10% effective as of July 1, 2017 for fiscal year 2018.
3 Executed Participation Agreements and Income Allocation Agreements (and Direct Generation Cost Forms, if applicable) must be in place prior to the receipt of all distributions to inventors and inventors labs.
Empowering ideas

PCI

connecting
educating
accelerating
empowering
commercializing

Alliances
Corporate Outreach
Start-up Companies
Programs & Resources
Agreements
Licensing

Robotics
Life Sciences
Medical Devices
Biopharma
Therapeutics
Materials
Diagnostics
Bioinformatics
Nanotechnology
Software
Hardware
Resources
Penn I-Corps Startup Accelerator

- NSF (National Science Foundation) program designed to facilitate commercialization of university research
- Short courses for faculty/student teams
- Focus on articulating solid business model for startup
- $3k funding
- Qualifies for $50k National NSF follow-on program
- Path to SBIR/STTR funding
- 32 companies created

LEARN MORE: wwwpci.upenn.edu/icorps
PCI Ventures provides a suite of services and hands-on support to promote entrepreneurship and to incubate early-stage technology-based businesses as they make their way towards commercial success.
We unite Penn’s interdisciplinary strengths in Medicine, Engineering, and beyond to create transformative technologies that address the world’s pressing healthcare needs.

**Innovation**
Foster novel healthcare technology ideas based on science and technology developed at the University of Pennsylvania

**Translation**
Empower Penn innovators to develop transformative medical devices and health technology

**Connection**
Serving as the hub for health technology innovators at Penn to connect with the Philadelphia community.

**Education**
Provide process and infrastructure to help develop and educate the next generation of med tech innovators

https://healthtech.upenn.edu/
PILOT AWARD PROGRAM

Program Overview

Scope
- Novel medical device and healthcare technology ideas based on applied science and technology developed at Penn and CHOP.

Healthcare Needs
- Drug and gene therapy delivery, neuro monitoring and therapeutics, connected health, or general.

Assigned Mentor
- Meets monthly with team to review progress, provide feedback and connections.

Support from PHT
- Quarterly in person meetings to review progress to milestones and escalate issues.
- Ad hoc connections to resources across Penn Community.

Funding Amount: up to 50K

Funding Duration: 12 months

Mentorship
- Internal
- Alumni

Connection to resources
Enabling a culture of innovation

Ongoing training and mentorship

Programs tailored for faculty and staff

Center for Health Care Innovation
https://healthcareinnovation.upenn.edu/
## Medical Device Accelerator Program

### Process

<table>
<thead>
<tr>
<th>Pre-development</th>
<th>Development</th>
<th>Design transfer</th>
<th>Project exit</th>
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<tbody>
<tr>
<td>Concepts are evaluated by medical device experts and industry partners and selected for development via the Medical Device Accelerator.</td>
<td>Projects go through a product development process that includes design inputs, computer aided design and simulation, bench testing, validation studies, manufacturing review, and regulatory clearance.</td>
<td>This is where the design is finalized and preparations are made for manufacturing of the first batch of devices for clinical use.</td>
<td>Successful device launches include licensing final products to medical device Original Equipment Manufacturers or forming venture backed startup companies.</td>
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</tbody>
</table>
Thank you!

QUESTIONS?

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Strategic Partnerships

- Ben Franklin Technology Partners
- IP Group
- Life Sciences Pennsylvania
- Osage University Partners
- PACT
- Philly Startup Leaders/Amplify Philly (SXSW)
- Technically Philly (Philly Tech Week)
- University City Science Center
What PCI does: Major Agreement Types

- License Agreement (TRM, Patents, Copyrights)
- Option Agreement
- Research Agreement (Sponsored, Collaborative)
- MTA – Material Transfer Agreement
- Data Use Agreement
- Confidential Disclosure Agreement
Article 2.1.4.1

INVENTIONS made by [undergraduate students] will remain the property of the students EXCEPT when an INVENTION:

• is made in the course of employment at the University
• results from work directly related to employment responsibilities at the University
• results from work or research performed under a grant or other sponsorship
• is created with another INVENTOR who has a duty to make or has made ASSIGNMENT to the University.

https://provost.upenn.edu/policies/faculty-handbook/research-policies/iii-d
Distributions Under Penn Patent Policy¹ (2.3)

- **Annual Distributions**
  - Will be processed 45 days after the end of each fiscal year (Period from July 1st to June 30th.)
  - For a hypothetical illustration of the distributions set forth in Sections 2.3.1 and 2.3.2, see Appendix C of the [Penn Patent Policy](#).
  - “Other” include PCI Operating Costs (OPEX), Department of Inventors Shares, School of Inventor’s Share, and University Research Share.

- **Quarterly Distributions**
  - Will be processed 45 days after the end of each quarter.
  - To the Inventor’s Personal Share ¹ is greater than or equal to $ 5,000.
  - To the Inventor’s Research Activity Share ¹; all research activity shares will be distributed quarterly.
  - Changes were announce by the University in the October 17, 2017 edition of the Penn Almanac. The article can be found at: [http://www.upenn.edu/almanac/volumes/v64/n09/of-record-changes-in-income-distribution.html](http://www.upenn.edu/almanac/volumes/v64/n09/of-record-changes-in-income-distribution.html)

- **Initial Deduction**
  - Penn previously authorized a reduction in the Initial Deduction rate to 10% effective as of July 1, 2017 for fiscal year 2018.
  - All distributees receive a greater portion of licensing proceeds from the commercialization of their inventions.

¹ Executed Participation Agreements and Income Allocation Agreements (and Direct Generation Cost Forms, if applicable) must be in place prior to the receipt of all distributions to inventors and inventors labs.
Who negotiates my research-related agreement?

Is the outside party a government agency or non-profit entity?

- **YES** → Office of Research Services
- **NO**

  Is the agreement related to an industry-funded human clinical trial or other research that requires informed consent for study subjects?

  - **YES** → Clinical Trial Contracting Unit in the Office of Clinical Research
  - **NO**

    Is the agreement a research-related agreement (e.g., funding, material transfer, data use) with a commercial entity?

    - **YES** → Penn Center for Innovation
    - **NO**
What system should I use to submit my research-related agreement request?

Is this a grant or contract with funds coming to Penn?

- **YES**
  Agreement should be entered by the PI or BA into the Research Inventory System: researchinventory.apps.upenn.edu

- **NO**
  Agreement should be entered by BA or PI into Penn ERA: www.pennera.upenn.edu

* Excludes service agreements
Key Organizations at Penn and Roles

- OCR – Office of Clinical Research
- ORS – Office of Research Services
- PennERA - Electronic Research Administration system
- RIS - Research Inventory System