Innovations & New Ventures at Northwestern
TODAY’S GOALS

1. Who are we & what do we do at Northwestern?
2. What does the invention disclosure process look like?
3. What should research administrators know about INVO?
4. How can you learn more about what we do at INVO?
To catalyze the translation of Northwestern innovations to benefit the public

- Become a source of impactful innovations and products that improve lives
- Become a magnet for entrepreneurial talent
Our Activities

Technology Transfer

IP Support (*Consultation, Filing, Office Actions, etc.*)
Technology Evaluations
Marketing Efforts

Innovation & Entrepreneurship Programming

Workshops
Seminars
Mentoring
Internships
Coordination with Classes, etc.

Space

The Garage
Faculty Hub
University Memberships
(*mHub, 1871 & MATTER*)

Funds

N.XT Fund ($10M)
NuSeeds Fund ($4M)
Areas of Innovation

- computer science
- life sciences
- nanotechnology
- engineering
- advanced materials
- therapeutics
- research tools
- biotechnology
- medical devices
- chemistry
- manufacturing
- physical sciences
- electronics
- computer science
Technology transfer activities focus on moving technology from the University to the public domain

BAYH-DOLE ACT of 1980
Change in IP Ownership

BAYH-DOLE ACT

NEW PRODUCTS

Northwestern INVO
Impact of Bayh-Dole on IP*

**PRE-BAYH-DOLE**
- <250 issued patents/year
- 30k university patents
- 5% led to new products

**POST-BAYH-DOLE**
- 5-6k issued patents/year (‘12–’14)
- 80k university patents (‘94–’14)
- 10-15% new products (‘12–’14)

**Significant Economic Impact of Bayh-Dole Act**
- 5000 startup companies
- >$500B GDP increase
- 3.8M US jobs

*AUTM US Licensing Activity Survey Highlights 2012-2014
Northwestern | INVO

FY16 STATS

- 203 Disclosures
- 15.7 Million in Licensing Revenues, Dollars
- 169 Agreements
- 2.2 Million in Equity Sales, Dollars
- 11 Startups
- 3.2 Million in Research Funded by Startups
- 488 Filed Patents
- 130 Issued Patents
An **INVENTION DISCLOSURE** is Northwestern’s record of an invention, the inventors involved, sponsorships, & other public disclosures and publications.

Inventors should plan to submit their invention disclosure **3-4 weeks prior** to a public disclosure

- Posters/abstracts/proceedings
- Journal articles, book chapters
- Conference presentations
- Some departmental seminars & thesis defenses
- Some grant proposals

**DISCLOSING AN INVENTION TO INVO DOES NOT PROTECT AN INVENTION.**
**A PATENT APPLICATION MUST BE SUBMITTED TO THE USPTO**
1. **PROTECT COMMERCIAL POTENTIAL**
   INVO can provide feedback on how to proceed in the commercialization process

2. **PROTECT INTELLECTUAL PROPERTY**
   If IP protection is appropriate, INVO can maximize IP protection if invention is disclosed in advance of public disclosure.

3. **FULFILL NU’S RESPONSIBILITY TO REPORT TO RESEARCH SPONSORS**
   INVO must report all inventions to respective public and private research sponsors

4. **IMPROVE MARKETING WITH INDUSTRY PARTNERS**
   INVO can help provide industry with insight into available technologies and the research that is taking place at the university.
Forms

Disclosure Forms

- Invention
- Copyright - Includes but not limited to literary and artistic works
- Software - Includes but not limited to source code
- Research Tool
Definition of Inventorship vs Authorship*

Accuracy of Grant Information*
- Describe the invention in a less technical manner.
- What is the relevance to the public?

- Describe the invention in a more technical manner.
- This helps our team and outside counsel to understand how this invention is distinct from other inventions.
- Note work that is similar and differentiate. Better to disclose information upfront.
Provide COMPLETE contact information.*

- **Name should be a LEGAL name**—what’s on a passport and legal documents.
- For patent filing, we need to include the country of citizenship.
- Please inform us of any address changes for future correspondences & royalty checks.
- Electronic signature is acceptable.
Life of a Patented Technology

1. DISCLOSURE SUBMISSION
   - Prior Art Analysis

2. INVENTION ASSESSMENT
   - Enabled application?
   - Identifiable market?
   - Non-problematic FTO?

3. PROVISIONAL PATENT APP

4. UTILITY PATENT APP
   - Licensee on horizon?
   - Licensee willingness to pay?

5. INTERNATIONAL PATENT APP

6. US ISSUED PATENT

7. FOREIGN ISSUED PATENT
Send relevant updates to IM, such as future public disclosures or technology development.

Be available to meet with IM to discuss your technology.

Complete the disclosure as thoroughly as possible.

Respond to IM as quickly as possible as they may have time-sensitive questions.
1. **Explore Additional Sponsored Research Opportunities**
INVO coordinates with other offices to review IP stipulations. Ideally, several weeks are needed to review these agreements.

2. **License Technology to Existing Company**
INVO helps identify and negotiate license agreements. If there’s interest, IMs contact faculty to discuss.

3. **Create University Startup**
INVO has Startup Guide online.
Northwestern Licensees (Past & Present)
Our Startup Playground

- Diagnostic Fingerprinting
- Nanomaterials
- Personalized Medicine
- Artificial Intelligence
- Nanoparticles
- Therapeutics
- Biotechnology

- Big Data
- Gas Storage
- Software Encryption
- Tangible Haptics
- Machine Learning
- Robotics
- 3D Imaging
- Software Optimization
- Advanced Materials
- Medical Devices
- Wearables
- Point of Care Diagnostics
- Microfluidics
- High Performance Alloys
- Thin Film Transistors
- Point of Care Diagnostics
- Biomedical 3D Printing
- 3D Vision
- Sound Engineering
- Nanofabrication
- Cancer Diagnostics
- Plastic Recycling
- Surgery Devices
Northwestern Startups
<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBIR/STTR Funded Active Startups (2006-2016)</td>
<td>$56M+</td>
</tr>
<tr>
<td>VC-Backed Startups</td>
<td>$306M+</td>
</tr>
<tr>
<td>Acquired Startups</td>
<td>$2.72B+</td>
</tr>
</tbody>
</table>

Northwestern | INVO

NU Startup Funding & Acquisitions
Pre-Award
  • Commercialization Plan or IP Provisions – Reach out to INVO/Invention Manager early

Disclosures – Key items
  • Employee ID to identify personnel @ NU – our system is linked to myHR
  • Funding accuracy
    • Corrections result in costly fees to NU – each one can be hundreds of $
    • When possible, include grant Project Award Summary as an attachment to disclosure

Agency Requests
  • If you are ever asked from an agency about reporting, please reach out to INVO early
  • iEdison Reporting – INVO takes care of this; Please reach out to INVO/Invention Manager if asked by agency
  • Foundation/Private funding compliance – INVO takes care of this; Please reach out to INVO if asked by agency
Ways to Learn More about INVO

WEBSITE: Visit www.invo.northwestern.edu
INVO NEWSLETTER: Sign up on our home page
SOCIAL MEDIA: Follow us on Twitter (@INVOatNU)
STUDENT OPPORTUNITIES: INVO Practicum Interns and N.XT Associates
THANK YOU

Sonia Kim, PhD
sonia.kim@northwestern.edu

Danny Fisher, MBA
d-fisher@northwestern.edu