Innovation & 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?
INVO | Our Mission

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
INVO | 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)
INVO | Areas of Innovation

Northwestern
McCORMICK SCHOOL OF ENGINEERING

Northwestern
Medicine

Northwestern
WEINBERG COLLEGE OF ARTS & SCIENCES

Northwestern
MEDILL

- life sciences
- therapeutics
- research tools
- nanotechnology
- medical devices

- physical sciences
- engineering
- advanced materials
- biotechnology
- chemistry

- manufacturing
- computer science
- electronics
Technology Transfer

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
Impact of Bayh-Dole on IP*

PRE-BAYH-DOLE

- <250 issued patent/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
INVO Staff

INVENTION MANAGEMENT TEAM

Alicia Löffler, PhD
Executive Director

Michael Moore, PhD
Life Sciences

Nicole Janovick, JD, PhD
Life Sciences, Copyright

Gwendolyn Humphreys, PhD
Life Sciences, Research Tools

Wenting Luo, PhD
Life Sciences

Andrea Minogue
Finance & Administration

Arjan Quist, PhD
Physical Sciences, Engineering

Sarah Kamper, PhD
Chemistry

Isabella Ortiz, JD
Engineering, Computer Science

Anne-Isabelle Henry, PhD
Chemistry, Materials, BME

NEW VENTURES TEAM

John Haugen, JD, PhD
Assoc. General Counsel

Dimitra Georganopoulou, PhD
Life Sciences, Medical Devices

Lisa Dhar, PhD
New Business Ventures for Engineering

Nick Maull, JD
Venture Funds

Sonia Kim, PhD
Marketing & Educational Programs
INVO | FY18 Stats

210 INVENTIONS DISCLOSED
460 PATENT APPLICATIONS

171 AGREEMENTS EXECUTED
7.7 MILLION IN LICENSING REVENUES, DOLLARS

170 PATENTS ISSUED
9 STARTUPS
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**
Reasons to Disclose to INVO

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.
The Invention Disclosure

Policies and Forms
Access policies and forms related to disclosing, patenting and commercializing inventions, including royalty distribution, intellectual property and conflict of interest.

Disclosure forms
- Invention Disclosure Form
- Lurie Invention Disclosure Form: For Pediatrics faculty with a Lurie appointment (more info)
- Copyright Disclosure Form: Includes but not limited to literary and artistic works
- Software Disclosure Form: Includes but not limited to source code
- Research Reagent/Research Tool Registry
Invention Disclosure Form

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.
Invention Disclosure Form

- Note work that is similar and differentiate. Better to disclose information upfront.

<table>
<thead>
<tr>
<th>PUBLIC DISCLOSURE</th>
<th>WHERE</th>
<th>DATE</th>
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<tbody>
<tr>
<td>Journal Article</td>
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<tr>
<td>Conference Abstract</td>
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<td>Oral Presentation</td>
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<td>Poster Presentation</td>
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<td>Disclosure to Industry</td>
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<td>Grant Proposal</td>
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<tr>
<td>Other</td>
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<thead>
<tr>
<th>DATE AND PLACE WHERE DISCOVERY WAS MADE</th>
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<tbody>
<tr>
<td>Where was the idea conceived?</td>
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<td>Where and how was it documented?</td>
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<td>Was the idea reduced to practice?</td>
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<td>if so, when?</td>
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<tr>
<th>PRIOR ART</th>
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<tr>
<td>List all known related patents and/or publications:</td>
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<td>List known researchers who are active in this field:</td>
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<tr>
<td>How have others tried to solve the problem this invention overcomes?</td>
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<tr>
<th>COMMERCIALIZATION</th>
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<tr>
<td>What commercial problem does the invention solve? What is the current need?</td>
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<tr>
<td>Who are potential licensees? (Please list companies with any known contacts or highlight relevant industries)</td>
</tr>
</tbody>
</table>
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.

* A digital signature (Example: John Doe, Jr.) can be pre-signed and sent with the completed disclosure form by email to the Office of Technology Transfer. A digital signature may also be accepted. Please contact the Office of Technology Transfer to discuss acceptable methods of electronic submission.
Life of a Patented Technology

1. **DISCLOSURE SUBMISSION**
   - 30 DAYS

2. **INVENTION ASSESSMENT**
   - Prior Art Analysis
   - 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**

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Northwestern
Important Take-Homes

Complete the disclosure as thoroughly as possible.

Be available to meet with IM to discuss your technology.

Respond to IM as quickly as possible as they may have time-sensitive questions.

Send relevant updates to IM, such as future public disclosures or technology development.
Commercializing Technologies

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
- Geolocation
- Artificial Intelligence
- Nanoparticles
- Therapeutics
- Biotechnology

- Big Data
- Tangible Haptics
- Robotics
- High Performance Alloys
- Advanced Materials

- Gas Storage
- Machine Learning
- 3D Imaging
- Medical Devices
- Point of Care Diagnostics
- Biomedical 3D Printing

- Software Encryption
- Electricity Storage
- Software Optimization
- Microfluidics
- Thin Film Transistors
- Surgical Devices
- Sound Engineering
- Plastic Recycling

- Wearables
- Cancer Diagnostics
- Electricity Storage
- Personalized Medicine
- High Performance Alloys
NU Startup Funding & Acquisitions

$56M+  SBIR/STTR Funded Active Startups (2006-2016)

$306M+  VC-Backed Startups

$2.72B+  Acquired Startups
Recent Issues for Discussion

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. For global I&E, visit https://www.northwestern.edu/innovation/index.html

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

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