Navigating the Path from Research to Marketplace at Illinois

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Office of Technology Management (OTM)
CIRSS Seminar
GSLIS
The University manages a number of resources designed to facilitate all stages of the process of technology transfer. Overseen by the Office of the Vice President for Research, the University’s technology commercialization infrastructure is comprised of the following entities:

- The Offices of Technology Management (OTMs) The Chicago and Urbana campuses each have an OTM that evaluates, patents and licenses the University’s intellectual property.
- Illinois VENTURES LLC provides consultative services, potential funding, and business development support for early-stage, research-driven companies, particularly those deriving from the University of Illinois, other midwestern universities, and federal laboratories.
- University-associated research parks and incubators in Chicago and Urbana support and nurture the growth of early-stage companies. They encourage R&D collaboration between the University and partners in industry and government, as well as attract established companies that benefit from close working relationships with University faculty and students.

Defining Technology Transfer

In its broadest sense, technology transfer is the transfer of knowledge, ideas, discoveries and innovations to the public. There are many ways to accomplish this, including publication, student graduation and employment, participation in scientific meetings, and collaboration with industry and licensing innovations.

For the purposes of this handbook, technology transfer is the evaluation, protection, marketing and licensing of intellectual property to start-ups and existing companies. Additionally, while we use the terms technology and intellectual property interchangeably, there are subtle differences between them. Technology is a subset of intellectual property and commonly refers to commercially useful intellectual property.

OSPR: Office of Sponsored Programs and Research Administration (Urbana);
ORS: Office of Research Services (Chicago)
OTM Overview

The Office of Technology Management’s **mission** is to encourage innovation, enhance research, and facilitate economic development through the transfer of intellectual property.

**OTM Profile**
- Technology Managers
- Licensing/Legal
- Patent Agents
- Marketing
- Business and Administration
- Interns

**Partners**
- Faculty, Staff, Students
- Research Park, TEC
- Venture capital firms
- Industry
- OSPRA
Technology Transfer Process

Screening
- Patentability Inquiry
- Inventor Interviews

Marketing
- Identify Partners
- Trade Shows

Licensing
- MTAs*
- NDAs

Invention Disclosure
- Engagement Outreach
- Education

Feedback from Industry
- Market Analysis

VC contacts
- Negotiations

Compliance

Avg. U.S. Patent to issue costs $25,000

Return/Assign to Inventor
Release to public
The University supports or provides access to a spectrum of resources that enable UI research to reach the marketplace. These resources include internal and external programs that span the spectrum from free mentorship to early-stage start-up funding. Every innovation follows a unique path to market impact, and so the University has developed this system of resources to support innovators with different needs at different stages of the commercialization process. The specific programs an innovator chooses to access will vary depending on the needs of the technology and the intention of the innovator.
University technology transfer is a relatively new career field

- **Bayh-Dole Act**
  - Legislation passed in Dec. 1980
  - Permits universities to pursue ownership inventions arising from government-funded research
  - Prior to Bayh-Dole, $78B/year invested in government sponsored R&D from which the U.S. government had accumulated 28,000 patents and licensed fewer than 5%

- University TTOs started to gain traction in early 2000s
- Most TTO professionals in their mid-to-late careers
  - Most have industry experience, all have advanced degrees and technical backgrounds (2 PhDs, 1 PhD/MBA, 2 MS/MBA, 1 MS, 1 MBA)
- Career gaining popularity among young professionals

- Professional organizations
  - **AUTM** – Association for University Technology Managers
  - **LES** – Licensing Executives Society
OTM Licenses and Key Statistics

**FY 2013 Snapshot**
- Inventions Disclosed: 181
- U.S. Patent: 191 / 72
- Licenses & Options: 46
- Startup Companies: 6
- Royalties Earned: $4.91M

**5 Year Snapshot (FY09-FY13)**
- Disclosures: 969
- U.S. Patents Filed/Issued: 839/327
- Licenses & Options: 220
- Startups w/ UI Licensed techs: 34
- Royalties Earned: $28.25 million*
What does the OTM consider a success?

- Signing a license
- Bringing recognition to the University
- Helping the investigator form a start-up company
- Bringing research money into an investigator’s lab
- Getting products on the market
- Bringing $$$ to the University and inventors
- Public relations opportunity to show off economic development
Illinois Startups and Cutting-edge IP
Educational Animations Saving Lives
## Mobile Applications

### Routes

<table>
<thead>
<tr>
<th>Grid</th>
<th>Map</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Navy Pier" /></td>
<td><img src="image" alt="Chicago River" /></td>
</tr>
<tr>
<td><img src="image" alt="Lakefront Marinas" /></td>
<td><img src="image" alt="Museum Campus" /></td>
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</tbody>
</table>

### Map

- **Navy Pier:**
  - **Why a seawolf?** (subtopic)
    - Water showing a seawall build of looserocks with a tree line behind it
  - **Habitas lost** (subtopic)
    - A pond surrounded by grassand tall weeds

- **Dock Street Entrance** (topic)
  - Navy Pier, Dock Street entryway

- **Along the Pier** (topic)
  - A rivers tour boat on the river, passing by a control tower

### Table

<table>
<thead>
<tr>
<th>#</th>
<th>Icon Image</th>
<th>General Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><img src="image" alt="Ferris wheel" /></td>
<td>Navy Pier (Route 1)</td>
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<tr>
<td>A</td>
<td><img src="image" alt="Navy Pier" /></td>
<td>Dock Street Entrance</td>
</tr>
<tr>
<td>1.</td>
<td><img src="image" alt="Seawall" /></td>
<td>&quot;Why a seawolf?&quot; (subtopic)</td>
</tr>
<tr>
<td>2.</td>
<td><img src="image" alt="Pond" /></td>
<td>&quot;Habitas lost&quot; (subtopic)</td>
</tr>
<tr>
<td>B</td>
<td><img src="image" alt="Boat" /></td>
<td>Along the Pier (topic)</td>
</tr>
<tr>
<td>1.</td>
<td><img src="image" alt="Chicago skyline" /></td>
<td>&quot;The river runs backwards&quot; (subtopic)</td>
</tr>
<tr>
<td>2.</td>
<td><img src="image" alt="Pipe" /></td>
<td>&quot;But when it rains&quot; (subtopic)</td>
</tr>
<tr>
<td>C</td>
<td><img src="image" alt="Lighthouse" /></td>
<td>Viewing Deck (topic)</td>
</tr>
</tbody>
</table>
Screenshot of Jupiter and its moons, taken from a scene in “The Europa Report”

Screenshot of “Life and Death of Stars”, an online class by “The Teaching Company”
Licensing Software

Reinventing Video Collaboration

- Gesture-based video communication
- StagePresence video presentation suite now available
- Funding from AMD Ventures

One Share at a Time

- Accessed by more than 400 million users across 1 million websites
- #35 on Forbes list of America’s Most Promising Companies

ShareThis
ShareTheVision    Tech Showcase

• 35 faculty presented breakthrough research
• Panel discussions with venture capitalists and corporate partners.
• Attendees from across the country: Chicago, St Louis, Indianapolis, San Francisco, Boston, Seattle, Minneapolis, Boston, Detroit, Milwaukee and more
• Tours of start-up companies in EnterpriseWorks

>200 attendees & participants
Illinois Proof-of-Concept Fund

- Bridging the gap between University innovations and the marketplace
- Contributions from colleges & institutes and the OVCR
- First round of funding Spring 2014

http://otm.illinois.edu/IPOC
Mobile Applications

• Signed legally approved agreements with Apple and Google for iOS and Google Play development

• Following same process as for software disclosures with additional process for compliance with Apple and Google reqs.
Research Park at the University of Illinois

- Technology-based businesses can work with the research faculty and students on collaborative research and access UI services.
- 90+ companies and employs people in high-technology jobs
- ~ 400 UIUC student employees work year round for companies in internal corporate R&D and product development programs.
- 2011 Top 10 Start-up Incubators to watch for, by Inc.com
- 2010 One of 10 US Incubators That is Changing the World, by Forbes.com
- Named in 2011 by AURP as “Research Park of the Year”
Resources in the Research Park and on Campus

• EnterpriseWork Incubator
  • i-Start
  • EIRs
  • Student Shared Services
  • Mobile Development Day
  • NSF i-Corps site

• Entrepreneurship Portal:  
  http://entrepreneurship.illinois.edu/forum/

• TEC http://www.tec.illinois.edu/
  • Innovation LLC (Living Learning Community)
  • Social Fuse
# I-START PROGRAM

## I-Start Entrepreneur Services

<table>
<thead>
<tr>
<th>Service Types</th>
<th>Legal Services</th>
<th>Business Planning</th>
<th>SBIR Assistance</th>
<th>Financial and Payroll Services</th>
<th>Student Shared Services Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider of Services</td>
<td>Singleton Law Firm</td>
<td>Serra Ventures</td>
<td>Skreiner Consulting</td>
<td>Hanson Financial</td>
<td>EnterpriseWorks Student Interns</td>
</tr>
<tr>
<td>Scope of Services</td>
<td>Initial Company Formation, bylaws, application for FEIN (filing fees paid by entrepreneur)</td>
<td>Write Business Plan with inventor input</td>
<td>Finding solicitation and agency fit</td>
<td>Payroll admin</td>
<td>Market research</td>
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<tr>
<td></td>
<td>Stockholder agreements and certificates</td>
<td>Financial Projections</td>
<td>SBIR process guidance</td>
<td>Quarterly Financial Statements assistance</td>
<td>Presentation assistance</td>
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<tr>
<td></td>
<td>Stock option plan</td>
<td>Recommendation on sources of capital</td>
<td>Draft budget</td>
<td>Assistance with QuickBooks setup for the business</td>
<td>Initial template website</td>
</tr>
<tr>
<td></td>
<td>Employment Agreement</td>
<td>Assistance with hiring and incorporation decisions</td>
<td>Writing assistance</td>
<td>Project Management Registrations and Submission</td>
<td>Logo assistance</td>
</tr>
<tr>
<td></td>
<td>Non disclosure agreements</td>
<td></td>
<td>Help with letters of support</td>
<td></td>
<td>Social media, AdWords</td>
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<td></td>
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<td></td>
<td></td>
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<td>IT/Computer system setup</td>
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<td>(up to 100 hours of student work)</td>
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Negotiated service packages with targeted consultants that focus on technology startups as their core market. May expand to additional providers.
Entrepreneurs-in-Residence Provide business guidance to startups

- 277 appointments in 2012
- Lori Patterson joined the EIR team
- 2012 EIR workshops:
  - Building a High Performance Team
  - Understanding Term Sheets
  - Deciding between Consultants and Employees
  - Federal Grant Audits and Incurred Cost Proposals

• Sales Mastery
• Preparing for Equity Investment (and How to Survive Until Then)
• Pitch Presentations
• Building An Audience for Your Website
• How to Effectively Structure and Use Board of Directors/Advisors
• Market Validation

Lori Patterson
Pixo founder and CEO, former Accenture consultant

Jed Taylor
JLT Consulting and Pattern Insight, Siebel Scholar

Tim Hoerr
Serra Ventures & Cbana, Immuven, Gameday Sports, Striped Sail, CPA, Valuation expert

Dennis Beard
Serra Ventures & Open Prairie Ventures CFO, UI Business Adj. Faculty - Finance

Chad Stiening
Mentor Management & CEO of Kypha medical diagnostics firm

Alan Singleton
Singleton Law Firm, specializes in tech startups and IP
What is Intellectual Property (IP)?

*Covers All forms of creativity*

- Inventions, processes, patents
- Copyrightable and artistic works
- Software
- Data, Databases, research results
- Tangible property: machines, biomaterials, chemicals, plants, “unique research resources”
- Trade secrets (confidential information)
- Trademarks
Evaluating Technologies
Things to consider

• What is the IP and Can the IP be protected (copyright, patent, trademark, trade secret)?
• Can the patent rights be enforced?
• Do we need other IP to make ours work?
• Does anyone else own it with us?

• What is the market potential?
• What are the industry hurdles?
• Are there any safety or regulatory concerns?
• Who are the potential licensees?
• Who will pay, how much will they pay?
Commercializing University IP

• University IP is transferred / commercialized through Licenses – rarely through ownership

• A license is an agreement between IP owner and another entity/individual authorizing the right to exploit the IP – an agreement not to sue for infringement

• Licenses can split up ownership rights in different ways
  • Exclusive / nonexclusive
  • By field, territory
  • Royalty bearing, royalty-free, other fees
  • Diligence to commercialize

• When University makes money, inventors receive 40% net (after patent expenses)
Ownership of IP:

- **Patent, trademark, and copyright law**
  
  Ownership initially vests with inventor/author but subject to….

- **Contract law**
  
  Inventor/author does not own by virtue of an agreement (e.g., agreement to assign, employment agreement, etc.)

- **Copyright Law**
  
  “Work made for hire” – works by employee belong to **employer**. Def: works by employee w/in scope of employment or a commissioned work (independent contractor) plus agreement with employer

- **Bayh-Dole** – Federal law and provides for University ownership

- **General Rules** – Determine University ownership
Student Works

- Student Works as noted below are owned by the students:
  - Copyrightable works prepared as part of requirements for degree, including theses and dissertations
  - Reports, classroom assignments submitted as part of a course
    - Caveats:
      - Original records and software of an investigation for thesis or dissertation are property of University
      - Underlying data and results developed using University resources are owned by the University
University could have ownership of student works and inventions if:

- using University resources or background IP owned by the University
- collaboration with a University employee

The University has administratively exempted certain student inventions for certain student entrepreneurship activities classroom projects

- e.g., patent pilot program, Tech Entrepreneurship Center, use of space at EW, business plan competition awards
Copyright Protection

Steps to getting a copyright: Nothing

• Copyright is automatic upon creation

• © 2013 University of Illinois Board of Trustees

• Registration not required

• Registration is required before suing for infringement
Copyright Licensing

• Permissions
• License Agreement
• Incoming and outgoing copyright licenses/permissions
• Bundle of Rights to license
  • Rights to: copy, distribute, make derivative works, public display, public performance
• Copy Left (next slide)
Creative Commons (CC) Licenses

- 6 licenses developed for copyrighted works, user friendly:
  - **Attribution**: (BY) The work can be used, copied, distributed and modified, as long as the author / institution is appropriately acknowledged.
  - **Share Alike**: (SA) The work can be used, copied, distributed and modified, but only under the same CC license.
  - **Non-Commercial**: (NC) The work can be used, copied, distributed and modified, but not for commercial purposes.
  - **No Derivative Works**: (ND) This work can only be copied and distributed, but you can’t modify it in any way or create work a based on the original.
  - **All** Free, no warranties,
  - **Other Combinations**:
    - Attribution, Non-Commercial, Share Alike
    - Attribution, Non-Commercial, No Derivatives
Commercialization of Copyrighted Works

- Software code
- Databases (e.g., MarketMaker)
- Curricula
- Surveys
- Mobile apps
- Wiki site
GSLIS Works

- Publication agreements for Library Trends & The Bulletin of the Center for Children’s Books

- OTM was asked to look into the IP terms and advise on whether or not they could create a working community for the Open Annotation Community within W3C community
Questions?

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