Agenda

12:00 – 12:25 pm  Intellectual Property
12:25 – 12:40 pm  Conducting a Prior Art Search
12:40 – 12:45 pm  Competitor Information
12:45 – 2:00 pm   Team Presentations / Q&A
Technology transfer is the process of transferring scientific findings from one organization to another for the purpose of further development and commercialization. The process typically includes:

- Identifying new technologies
- Protecting technologies through patents, copyrights or other forms of IP protection.
- Forming development and commercialization strategies such as marketing and licensing to existing private sector companies or creating new startup companies based on the technology

Bayh-Dole Act (1980) –

- Universities own inventions made with federal research money in their labs
- Promotes commercialization of research
- Encourages university-industry collaboration
Driving the Innovation Economy
academic technology transfer in numbers

From 1996 to 2015, up to...

- $1.3 trillion contributed to U.S. gross industrial output
- $591 billion contributed to U.S. gross domestic product
- 4.3 million jobs supported

- 380,000+ inventions disclosed...
- 80,000+ U.S. patents issued...
  to research institutions in the past 25 years

- 11,000+ start-ups formed since 1995
- 70% of university licenses are to start-ups and small companies
- 200+ drugs and vaccines developed through public-private partnerships since Bayh-Dole Act enacted in 1980
Examples – Gatorade®, synthetic penicillin, laser surgery, Alegra®, avian flu vaccine

Source: Association of University Technology Managers Report (2017)
Types of Intellectual Property Protection

• **Patents** – protects new and useful inventions

• **Copyrights** – protects creative expressions of ideas as fixed on a tangible medium.

• **Trademarks** – protects a mark, symbol, or name associated with the source of a particular good or service.

• **Trade secrets** – protects anything that has commercial value from not being generally known by others and that is kept secret.

• **Others**
• For inventions
• Cover new, useful and nonobvious ideas for processes, machines, manufactures, compositions of matter, or improvements
• Exclusive right to prevent others from making, using, selling, offering for sale or importing the invention
• Owned by inventor or his/her assignee
• Duration – 20 years
• For works of art or authorship
• Cover original **expression** of an idea like art, music, writings, sculpture, software, designs **fixed on a tangible medium**.
• **Registration is not required** but adds additional legal protections
• Exclusive right to reproduce, perform, display, distribute copies or make derivative works
• Owned by the author or his/her assignee
• Duration – life of author plus 70 years
• **NOTE**: Fair Use Exception
• For brands and logos
• Cover a name, symbol, picture, sound or smell associated with a company, product or concept
• Exclusive right to use the mark in commerce
• Owned by company the mark is associated with and used to identify the source of the good or service
• Duration – indefinite
• For information that has economic value because it is secret and is kept secret through reasonable steps (e.g. restricted access, confidentiality agreement)
• Governed by state law (different standards but see Uniform Trade Secrets Act)
• Right to sue others if they misappropriate or use outrageous means to acquire the secret
• Owned by the secret keeper (company or individual)
• Duration – indefinite (as long as kept secret)
Other Types of IP

• Plant Variety Protection
• Industrial Design Rights
• Moral Rights (right to not alter original copyright)
• Geographic Indications (Mexico’s Tequila)
• Mask Works (semiconductor chips)
• Data Base Rights (“hot news” doctrine/ facts and data can be protected if time-sensitive and complex)
<table>
<thead>
<tr>
<th></th>
<th>Patents</th>
<th>Copyrights</th>
<th>Trademarks</th>
<th>Trade Secrets</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quick Description</strong></td>
<td>Inventions</td>
<td>Creative works of expression</td>
<td>Brands/logos</td>
<td>Know-how</td>
</tr>
<tr>
<td><strong>Default Owner</strong></td>
<td>Inventor</td>
<td>Author</td>
<td>Originator</td>
<td>Originator</td>
</tr>
<tr>
<td><strong>Rights</strong></td>
<td>Prevent others from making, using, selling, offering for sale or importing</td>
<td>Right to reproduce, perform, display, distribute or make derivative works</td>
<td>Right to use in commerce</td>
<td>Right to sue others if they use illegal or outrageous means to acquire</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>20 years from filing</td>
<td>Life of author plus 70 years</td>
<td>Potentially indefinite</td>
<td>Potentially indefinite</td>
</tr>
<tr>
<td><strong>Cost to File</strong></td>
<td>Several thousand dollars</td>
<td>$35</td>
<td>$350+</td>
<td>No filing</td>
</tr>
</tbody>
</table>
Three Classes of Patents

• **Utility patents** – protects the way an invention is used and works.

• **Design patents** – purely aesthetic creations, like a Coca-Cola bottles shape, look, color, etc.

• **Plant patents** – asexually reproduced plants other than tuber propagated plants and plants found in uncultivated state.
• Cover Sheet Form
• Specification
  o Background of Prior Art
  o Description of how to make or use invention
  o “Embodiments” – examples of how the invention can be made or used
• Drawings
  o Only if necessary to understand the invention
• Claims
  o Set the boundaries of what constitutes your intellectual property
• Inventor Oaths and Declarations
“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”

35 U.S.C § 101
• Processes or methods
• Machines
• Manufactures
• Compositions of matter
• Improvements of the above
The following are not patentable:

- Laws of nature (e.g. $E=mc^2$)
- Products of nature (e.g. isolated DNA)
- Scientific principles or theories
- Abstract ideas (e.g. some computer software, business methods)
- Mathematical algorithms or formulae
- Illegal objects
- Purely aesthetic creations
- By federal law, materials for atomic weapons
35 U.S.C. § 112

• Statement on “best mode” or “how to use” the invention

• Use cannot be
  o Frivolous, e.g. expensive transgenic mouse for use as snake food
  o Illegal, e.g. computer program that can only be used as a virus

• Easy standard to meet
35 U.S.C. § 102

- No “prior art” disclosing the same invention
  - Printed publications (e.g. journal article or advertisement)
  - Filed patent application
  - Public knowledge, widely known
  - Public use (e.g. a demonstration)
  - Prior sale or offer for sale

- **CAUTION**: Your own disclosures can serve as prior art!
  - Can share inventions with others that have signed Non-Disclosure/Confidentiality Agreements
  - “One-year grace period rule” – U.S. patents only!
35 U.S.C. § 103

• Obvious in light of any combination of prior art
• PHOSITA – person having ordinary skill in the art
  o Knows all prior art references
  o Typical educational level and skill for the field
  o “Ordinary creativity”
THE FIRST LAW OF INVENTING

\[ I = U + N + U' \]
• **Inventors** – legal definition
  - Must contribute to the **conception of** the invention as claimed
  - *Reduction to practice per se not enough* (i.e. being instructed to perform an experiment)

• **Not** the same as a co-authorship

• However, can share royalties with contributors even if they are not co-inventors
• International Patent Cooperation Treaty
  o No such thing as an “international patent”
  o Patent Cooperation Treaty (PCT) – 143 countries
    ▪ First step only
    ▪ Must file national phase for each country within 30 months

• Distinctive features of U.S. patent law
  o Switch from first-to-invent to first-to-file system – same as other countries (AIA)
  o NOTE: One-year grace period rule still applies
• **Patentability** – your invention meets the requirements of usefulness, novelty and non-obviousness

• **Freedom to operate** – your ability to use your patent is not prevented by:
  - Another patent
  - Government regulations
  - Contracts
CONDUCTING A PRIOR ART SEARCH
Sources of Prior Art

• Anything publicly available anywhere in the world and that is *enabling*:
  - Printed publications
  - Websites
  - Presentations open to the public
  - Patents and patent applications
  - Public knowledge
  - Public use or demonstration
  - Prior sale or offer for sale
Steps to Find Similar Patents

1. Go to www.google.com/patents
2. Search key words relevant to your invention
3. Click on most relevant titles
4. Skim patent
5. Dig deeper
6. Document what you find
7. Repeat
• **Any reference anywhere in the world** that is publicly available can serve as a bar to obtaining a patent.

• **If your invention is not described in a patent**, you still must search additional publications (e.g., scholarly journals) to determine if your invention is patentable!
• Document in which signer legally agrees not to disclose specific information

• Protects against:
  o Another group using your idea
  o Legal bar to foreign patent protection
  o New development during an ongoing research relationship

• Stamping a document “CONFIDENTIAL” has NO LEGAL EFFECT without a signed confidentiality agreement.
COMPETITOR INFORMATION
Identify competitive products or services:

• What is the competitive product or service value proposition?
  o Faster, bigger, stronger, etc.
  • Who currently buys the competitive product or service?
  • How long has the competitor been selling its product or service?
  • What resources do they have?
  • What share of market does the competitor control?
Compare competition with your proposed product or service:

• Compare value propositions
  o If they’re faster, so what, does anyone care?

• What makes your product different from the competition?
  o New or easier way to solve problem.

• Is there another way to further differentiate?
  o Easier, less expensive, new feature, etc.
QUESTIONS?
Assignments for Next Week

• Complete the Budget Form and submit to icorps@lsu.edu
• Complete the Intellectual Property Form based on a prior art search and submit to icorps@lsu.edu
• Complete the Competitive Products Form based on review of potential competitors and submit to icorps@lsu.edu
• Complete the Customer Interview Form based on 3 interviews with potential customers and end users and submit to icorps@lsu.edu
• Meet with teaching team on Wednesday or Thursday, March 20 & 21 to discuss your progress – Sign up by emailing preferred slot to icorps@lsu.edu
• Prepare Presentation for Week 5

One-on-One Meetings March 21 & 21 2019
Next Class: Wednesday, March 27 2019