Patents & Pizza
Process & Policy
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Disclaimer

The materials & information provided in these slides are for informational/discussion purposes only and not for the purpose of providing legal advice.
Types of Intellectual Property

• Trademarks
• Copyright
• Trade Secrets
• Patents
Patent rights

• A patent is a right granted by the government through the US Patent & Trademark Office that allows an inventor to prevent others from making, using, selling, importing into the US the inventor’s creation without permission. This negative right lasts about twenty years.
OTC Manages UMD’s Patents

• IP disclosure ≠ automatic patent

• To disclose to OTC:

• The University engages outside counsel to prosecute patent applications before the USPTO

• OTC manages process
Patents

• Utility
  – process, machine, article of manufacture, or composition of matter, or any new and useful improvement thereof
  – New, useful, non-obvious

• Plant
  – asexually reproduced, distinct and new variety of plant

• Design
  – new, original, and ornamental design for an article of manufacture
UMD patents

Method to reduce avian collisions

Pitch tracking system

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Parts of a patent

• Background-what is the problem to be solved?
• A brief description or summary of the invention.
• A detailed description of the invention, including details of how to make and use the invention and drawings.
• Claims- A description in words of the precise invention that the inventor wishes to protect.
Patent criteria

- Novelty
- Utility
- Nonobviousness
Novelty: first-to-invent

- Not patentable if another inventor made the same discovery earlier
- Not patentable if invention has been used or sold, known to others, patented, or disclosed in a printed publication more than one year previously
- Applicable to patent applications filed before March 16, 2013

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Novelty: first-to-invent cont.

• The following events may lead to the loss of International Patent Rights, certain US rights, or may trigger the running of a one year grace period in the U.S.:
  – Publishing your invention in literature
  – Inclusion of your invention in a thesis or other accessible document deposited in a library
  – Posting the details of your invention on the Internet
  – Oral or written disclosure of your invention at scientific meetings or in any circulated abstract or preprint of a paper to be read at such a meeting
  – Any talk or demonstration of your invention at an open day, colloquium, lecture, or the like
  – Disclosing your invention to any visitors to the laboratory in a non-confidential manner, including posters in adjoining corridors
  – Mention of your invention in sufficient detail in any booklet available from a funding body to which an application has been made
  – Leakage of information relating to your invention from experimental trials carried out without taking precautions to avoid this
  – Advertisement, sale, use, or any form of commercial activity of the invention that is public

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Novelty: first-inventor-to-file

• U.S. Constitution (Art. 1, Sec. 8) gives Congress the power “To promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries”

• Rest of the world: patents granted generally to first-to-file

• America Invents Act (AIA): changes novelty requirements so the exclusive right may not necessarily be granted to the first inventor
Novelty: first-inventor-to-file cont.

• Novelty; Prior Art
  – For patent applications filed on/after March 16, 2013

§ 102. Conditions for patentability; novelty
(a) NOVELTY; PRIOR ART.—A person shall be entitled to a patent unless—
(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention; or
(2) the claimed invention was described in a patent issued ... or in an application for patent published or deemed published ... in which the patent or application, as the case may be, names another inventor and was effectively filed before the effective filing date of the claimed invention

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Novelty: first-inventor-to-file cont.

- Prior Art exceptions
  - An inventor’s (or one who obtained the information from the inventor) own public disclosure 1 year or less before the effective filing date of the claimed invention
  - Derived from the inventor
  - Common ownership
    - Joint research agreement
First-to-invent

Inventor who conceives first and is diligent to reduce invention to practice entitled to patent even if another files first

A conceives → A’s diligence ← B conceives

A files

B files

Patent awarded to A

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First-inventor-to-file

Same invention independently conceived by separate inventors

A conceives  B conceives  A files  B files

Patent awarded to A
First-inventor-to-file cont.

Same invention independently conceived by separate inventors

A conceives  B conceives  B files  A files

Patent awarded to B
First-inventor-to-file cont.

Inventor publicly discloses own invention:
1-year grace period from own disclosure to file patent application

One-year

A discloses

A loses patent rights

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Inventor publicly discloses own invention before 3rd party public disclosure:
1-year grace period from A’s own disclosure to file patent application

One-year

A discloses

B independently discloses

A loses patent rights

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First-inventor-to-file cont.

3rd party public disclosure may forfeit first inventor’s patent rights

A has to file or publish before B’s public disclosure to preserve rights

A conceives

B independently discloses

A loses patent rights

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Novelty, cont.

- Invention already patented?
- Described in a printed publication?
- In public use?
- On sale?
- Otherwise available to the public?

If yes to any, general rule: No patent rights remain.

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Nonobviousness

- A patent must not be obvious to a person who has ordinary skill in the art and is aware of previous work in the field. This criterion is subjective and is the most troublesome of all the requirements. Mere simplicity does not bar a patent.
Types of Patent Applications

• US Provisional
• US Non-Provisional
  – Parent
  – Divisional
  – Continuation
  – Continuation-in-Part (CIP)
  – National Stage
• International (PCT)
Provisional patent application

- Lasts one year
- Is never examined
- Simply registers the date on which the applicant filed, establishing a sort of priority
- Used frequently by OTC to save a place for an invention in advance of publication/public disclosure and to provide time to seek commercial partner to license and pay for the full patent

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Non-provisional (regular) patent application

- Have to file within one year of public disclosure (grace period) or provisional filing
- USPTO reviews for criteria (novel, useful, not obvious)
- Lasts for 20 years from date of filing if approved; becomes public 18 months after filing
- $$$$$
PCT (international) application

• Must file BEFORE any public disclosure
• UMD loses lots of foreign patent rights because faculty publish an article, then file an invention disclosure
• File within 1 year after U.S. application filed
• Published 18 months from priority date
• National stage applications: country by country patent examination

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Application process

- Must search existing patents to make sure your invention is not similar to a previous patent.
- Application includes drawings of your invention & specifications, descriptions & claims of the invention. Claims define the scope of your invention.
- Must include all pertinent information
- Applicant has to certify h/h belief that h/s is the original and first inventor.
- Disclose relevant prior art to USPTO

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Process Example

**Invention, Disclosure to OTC, Initial Filing**

- 2010
- 2013
- July 1, 2014
- October 22, 2014
- October 31, 2014
- October 22, 2015
- April 22, 2017

- Research
- Invention
- Disclosure to OTC
- OTC files Provisional
- Manuscript accepted & publishes
- OTC files PCT & US Non-provisional
- National Stage Entry from PCT

**In light of manuscript submitted to journal**

**Invention appears patentable & Licensee interest**

**Foreign countries not entered (key market in US)**

**Marketing & Licensing**

- Oct. 2014
- Dec. 2014
- July 2015
- 2018
- 2019-2035

- OTC sends marketing summary to company
- Company signs CDA with UMD
- Company & OTC negotiate license
- License Executed
- Company develops product
- Company sells product
- OTC collects revenue from company's product sales
- OTC distributes revenue to inventors & UMD

**US Patent Prosecution**

- Oct. 22, 2015
- Nov. 2017
- Dec. 2017
- March 2018
- May 2018
- July 2018
- August 2018
- Nov. 2018
- Dec. 2018
- 2022
- 2026
- 2030
- 2035

- Application filed in USPTO
- Examiner conducts search
- USPTO sends Office Action
- Respond w/ amendments & arguments
- Final Office Action
- Application amended/arguments submitted
- USPTO sends Notice of Allowance
- UMD pays issue fee
- Patent Issues
- Maintenanc e Fees
- Patent Expires

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Patent examination

1. Filing
2. First Action
   a. Restriction Requirement
   b. Rejection
3. Final Rejection
   a. Filing Request for Continued Examination (RCE): requires new search, next Action will be non-final
4. Appeal
5. Allowance
6. Issue
7. Maintenance

Examination 2-8 years
Once issued, patent in force ~20 years
Patent searching

- [http://www.google.com/patents](http://www.google.com/patents)
- [www.uspto.gov](http://www.uspto.gov)
- [https://register.epo.org/](https://register.epo.org/)
- Keyword
- Art unit/classification (class/subclass)
  - [http://www.uspto.gov/web/patents/classification/selectnumwithtitle.htm](http://www.uspto.gov/web/patents/classification/selectnumwithtitle.htm)
- Inventor
- Assignee
- Applicant
- Issued patents v. published applications
- Patent/publication number
- References

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Ready to patent?

• The idea is actually reduced to practice: the inventor has physically built the invention and conducted tests that show it operates as contemplated (actual reduction) or

• The inventor can describe the concept or idea of the invention in sufficient detail to enable anyone "reasonably skilled in the art" to make or use the invention (constructive reduction)
Who is an inventor?

• One who contributes to the conception of the invention
  – Conception is the formation in the mind of the inventor, of a definite and permanent idea of the complete and operative invention. An idea is sufficiently definite and permanent when only ordinary skill would be necessary to reduce the invention to practice, without extensive research or experimentation

• Joint inventors
  – Do not have to work together
  – Do not have to make same type or equal amount of contribution
  – Do not have to contribute to each claim

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Who owns inventions created by University employees?

• Federal law provides some of the answers
• University IP policy provides some answers
• Contracts provide the remaining answers
Who owns IP?

1. First look at who each inventor/author is
2. Then look at the assignment obligations of each inventor/author
   a. Where there is more than one assignee, then the IP is jointly owned
3. Is the inventor UMCP faculty, staff, or student, or none of the above?
4. Was IP made under a sponsored research agreement (SRA), using resources beyond those customarily provided*, within scope of employment of staff, or under another agreement?

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Inventor/Author is UMCP Faculty

• IP created under SRA?
  • If the IP is an invention conceived of or first reduced to practice under a federal award → UMCP owns (Bayh-Dole)
  • If the IP is subject to copyright only, and its creation was a requirement of the SRA → UMCP owns

• IP created using resources beyond those usually/customarily provided?
  – If Yes, then UMCP owns

• IP created under another contract?
  – Terms of contract control

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Inventor/Author is UMCP Staff

• IP created under SRA?
  • If the IP is an invention conceived of or first reduced to practice under a federal award → UMCP owns
  • If the IP is subject to copyright only, and its creation was a requirement of the SRA → UMCP owns

• IP created using resources beyond those usually/customarily provided?
  – If Yes, then UMCP owns

• IP created within scope of employment?
  – If Yes, then UMCP owns

• IP created under another contract?
  – Terms of contract control

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Inventor/Author is UMCP Student

• IP created under SRA?
  • If the IP is an invention conceived of or first reduced to practice under a federal award → UMCP owns
  • If the IP is subject to copyright only, and its creation was a requirement of the SRA → UMCP owns

• Is the student also a UMCP employee?
  – If Yes, and IP created within scope of employment, then UMCP owns

• IP created under research/academic activities only?
  – If Yes → Student owns
  – If No, and student did not have written permission to use resources → UMCP owns

• IP created under another contract?
  – Terms of contract control
Ownership of IP

For UMCP **faculty**, if:
- IP *not* created under SRA
- IP *not* created using Resources Beyond, AND
- Other contract does *not* give UMCP ownership
→ Faculty owns the IP

For UMCP **staff**, if:
- IP *not* created under SRA
- IP *not* created using Resources Beyond
- IP *was not* created w/in scope of employment, AND
- Other contract does *not* give UMCP ownership
→ Staff owns the IP

For UMCP **student**, if:
- IP *not* created under SRA
- Other contract does *not* give UMCP ownership
- IP *was not* created in the scope of employment of student employee, &
- IP was created as part of UMCP academic/research activities *only* and if not, *was not* created using Resources Beyond w/o permission
→ Student owns the IP

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OTC’s role

- Marketing
- Licensing
  - Assist in the formation of start-up businesses
- Ensure IP rights
  - patenting
- Government Reporting
- Royalty Distribution

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Inventor responsibilities

- Keep good records
  - Lab notebooks
  - Emails
- Disclose timely to OTC where applicable
  - Forms here: http://otc.umd.edu/disclose-invention
- Assist in patent process and update OTC on public disclosures
- Formalize research/collaboration agreements
Questions?

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BIOSCIENCE DAY PANEL & PROFESSOR VENTURE FAIR

NOVEMBER 20, 2014

10-noon

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