

# Protecting Intellectual Property

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*The UNIVERSITY of OKLAHOMA  
Office of Technology Development*

# Outline

- Basics of intellectual property (IP)
- Balancing IP protection with the need to maintain public access
- Process of gaining IP protection
- Process of IP marketing and commercialization



# Basics of Intellectual Property (IP)

**Intellectual property** - non-physical property that is the product of original thought

- Examples: inventions, literary and artistic works, designs, symbols, names and logos used in commerce
- Protecting IP provides owner a strategic advantage by excluding others from making, using, selling, or importing your invention



# Basics of Intellectual Property (IP)

## IP can be protected by:

- Trademarks - identify the source of goods/services to create consumer confidence
  - A mark or design (name, logo, slogan) used in trade
- Copyrights - protect original works of authorship fixed in a tangible medium
  - Literary, musical, dramatic, graphic, audiovisual, recordings, source code
- Know-how - non-traditional IP with commercial value, knowledge and/or skill, intangible
  - Secret recipe, must show affirmative steps to maintain confidentiality, no publication
- Patents - devices, compounds, methods, processes



# Basics of Intellectual Property (IP)

## Prior to enactment of Bayh-Dole Act (1980)

- Inventors obligated to assign ownership rights to US government for inventions they made using federal funding
- US government accumulated 28,000 patents
- Fewer than 5% were licensed to industry for developing commercial products
- American taxpayers were not getting the full benefit from the billions of dollars invested in research



# Basics of Intellectual Property (IP)

## Bayh-Dole Act (1980)

- Enabled universities, non-profits, and small businesses to retain an ownership position in inventions resulting from federally funded research
- Universities gained the ability to seek IP protection for early stage innovation
- IP protection provides entrepreneurs and businesses confidence to license, invest, and develop academic discoveries into marketable products



US Senators Birch Bayh (D-IN) & Bob Dole (R-KS)



# Basics of Intellectual Property (IP)

## Bayh-Dole Act (1980)

- Universities are encouraged to collaborate with commercial concerns to promote the utilization of inventions arising from federal funding
- Universities are expected to file patents on inventions they elect to own
- Universities are expected to give licensing preference to small businesses

## Since 1980, American universities have:

- Spun off more than 4,000 companies (the majority located in close proximity to the university)
- Produced 150+ FDA approved vaccines, drugs, and new indications for existing drugs



# Basics of Intellectual Property (IP)

*A patent gives the owner the right to **prevent someone else** from making, using, selling, or importing the invention.*

## **Patent eligible**

- Compositions of matter
- Articles of manufacture
- Machines
- Devices
- Methods of treatment
- Processes
- Designs

## **Not patent eligible**

- Laws of nature
- Natural correlations
- Natural phenomena
- Abstract ideas





# Basics of Intellectual Property (IP)

## Requirements for patentability:

### Useful

- Enabling description of how to make and use the invention

### Novel

- No public disclosure of the invention by someone else
- No public disclosure by the inventor 12 months or more prior to filing date

### Non-obvious

- Not already known separately in two or more public disclosures *and* would not be obvious to a person of “ordinary skill in the art” to combine them



# Basics of Intellectual Property (IP)

## Example: Develop new drug for treating cancer

Potential IP that could be protected:

- Chemical formula (composition of matter)
- Process to synthesize the drug
- Method of using the drug



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# Balancing IP Protection & Public Access

## University IP Policy (*Faculty Handbook, Appendix D*):

*“The people of the State of Oklahoma may reasonably expect that their investments in the University will create new industry and enhance existing industry within the State and Nation. Such new industry creates greater employment opportunities for citizens of the State and the Nation and an improvement in their standard of living.”*



# Balancing IP Protection & Public Access

University IP Policy (*Faculty Handbook, Appendix D*):

- **Objectives:**

- Encourage research, publication, and scholarship independent of potential financial gain
- Promote effective use and commercialization of patented materials
- Provide adequate incentive and recognition to inventors through proceeds derived from their creative works, trademarks, discoveries, and inventions



# Balancing IP Protection & Public Access

## University IP Policy (*Faculty Handbook, Appendix D*):

- **Ownership:** all discoveries and inventions made by OU faculty/staff/student either in the course and/or scope of employment for OU, or substantially through the use of facilities or funds provided by the University shall be owned by the Board of Regents of the University of Oklahoma
- **Inventorship:** can be faculty/staff/student



# Balancing IP Protection & Public Access

## University IP Policy (*Faculty Handbook, Appendix D*):

- Distribution of revenues received by the University directly attributable to the licensing, sale, or commercialization of a discovery or invention:
  - 35% - inventors
  - 65% - recoup IP expenses, support originating college and department, encourage further innovation



# Balancing IP Protection & Public Access

## Office of Technology Development (OTD)

- Obtain and maintain IP protection
- Preserve inventor's academic freedom in teaching, publishing, and researching

OTD can help you publish *and* patent - these are not exclusive processes!





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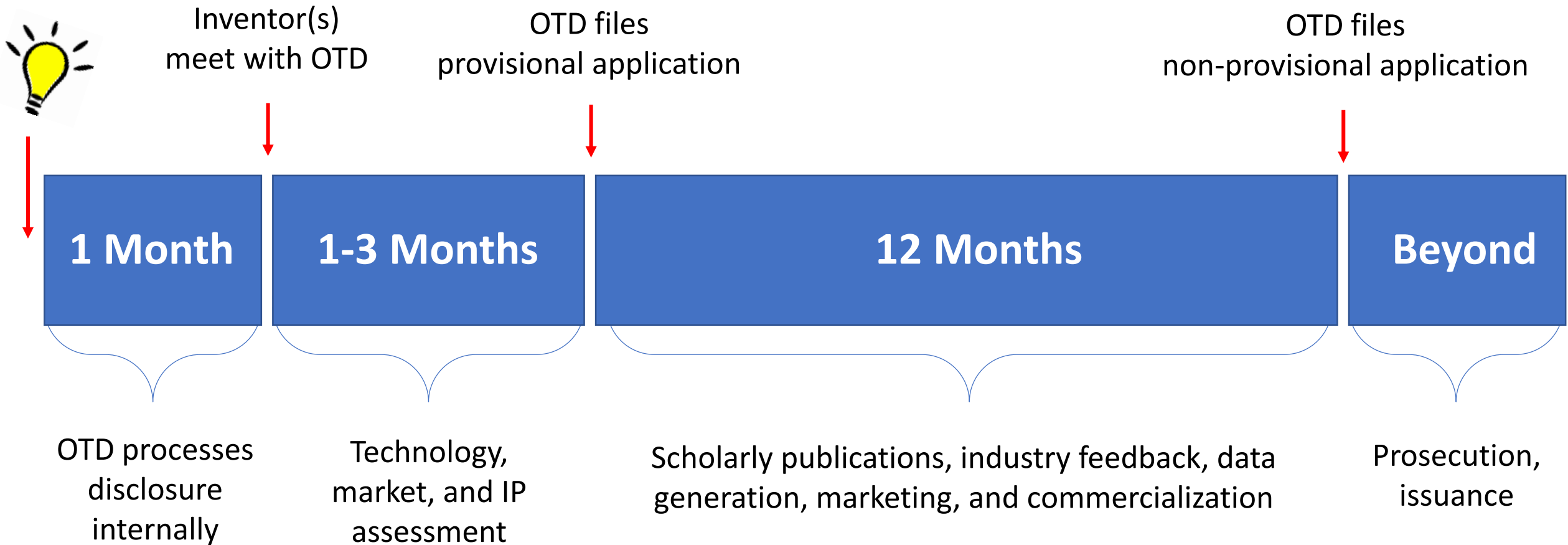
# Process of Gaining IP Protection

## When to contact OTD:

- Novel research that could lead to a commercial product
- New research related to prior IP
- Novel research related to Sponsored Funding and Collaborations
- Planned public disclosure (manuscript, conference, poster, etc.)
- If you are unsure, come talk to us!



# Process of Gaining IP Protection



# Process of Gaining IP Protection

## Common pitfall:

- Public disclosure less than 12 months prior to filing patent application
  - Limited patent protection outside of the US
  - Potential claims issued in the US due to unique one-year “grace period”
- Public disclosure more than 12 months prior to filing patent application
  - Unlikely to obtain patent protection



# Process of Gaining IP Protection

## Examples of public disclosures:

- Publications (hard copy or online)
- Grant proposals (if confidential matter is not explicitly marked)
- Preprints/draft manuscripts if distributed
- Abstracts (hard copy or online)
- Thesis/dissertation (if not embargoed & closed)
- Meeting abstracts or proceedings
- Posters (even if just in departmental hallways)
- Book chapters, websites, press releases
- Conference presentations
- Department seminars (if open and publicized)
- Non-confidential discussions/emails
- Sale, offer for sale or demonstration in public



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# Process of IP Marketing & Commercialization

## Collaborate with OTD to create “Marketing Abstract”

- Non-confidential material
- Problem/solution approach
- Commercially relevant data, differentiating factors

## OTD advertises your technology

- Online platforms - Flintbox, IN-PART
- BIO International Convention
- Direct updates to pre-existing industry contacts

The image shows a marketing abstract for a technology developed at The University of Oklahoma. The abstract is titled "Lipid Nanoparticles for Epidermal Self-Repair" and is identified by Tech ID: 2018-009 and IP Status: 62/650,417. It is managed by the Office of Technology Development (OTD). The abstract includes sections for Technology Type/Class, Mechanism/Modality, Applications, Clinical Need, Technology Summary, Differentiation Factors, Development Stage, and Inventors. A diagram illustrates the mechanism of action, showing the restoration of the epidermal barrier by delivering nanoparticles that synthesize ceramides from the inside out.

**OTD**  
OFFICE OF TECHNOLOGY DEVELOPMENT

**Lipid Nanoparticles for Epidermal Self-Repair**  
Tech ID: 2018-009 | IP Status: 62/650,417

**Technology Type/Class:** Therapeutic/Nanotechnology  
**Mechanism/Modality:** Restoration of epidermal barrier ceramides  
**Applications:** Atopic dermatitis/topical wound care

**Clinical Need**  
Atopic dermatitis (AD) is the most common chronic inflammatory skin disorder worldwide (225M people). Current solutions only treat the inflammation and do not treat the chronic skin-barrier deficit that underlies the disease. Many treatments contain either steroids or immune modulators, which are not FDA approved for use in the vast majority of patient population (infants <2 years of age). Furthermore, prolonged steroid use, even in adults patients, can cause irreversible barrier damage.

**Technology Summary**  
The inventive composition is a novel nanoparticle formulation designed to address the chronic barrier deficit. The chronic barrier deficit associated with AD and other forms of dermatitis, and common dry skin, is the loss of a functional skin barrier. By delivering these nanoparticles topically, the goal is to allow cells to repair their own barrier from the inside out via synthesis of the barrier ceramides using our delivered precursors. Functionally, the nanoparticles will prevent/reduce the frequency of symptoms seen in AD and other types of barrier-related skin disorders.

**Differentiation Factors**  
Cost-effective composition and method to enable skin cells to continually self-repair their barrier between applications, resulting in a safe and robust preventative.

- Unique compositions
- Non-steroidal therapeutic
- Proposed topical administration

**Development Stage**  
Research

**Inventors**  
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# Process of IP Marketing & Commercialization

## IN-PART Impact Report:

- 3,800 technologies on the IN-PART platform for industry subscribers to browse
- OU techs are viewed over double the platform average
- One of our Marketing Abstracts was in the **TOP TEN** most viewed technologies for Q3, 2018

so far, accompanied by a couple of pieces of feedback. The average number of views for technologies from The University of Oklahoma is over double the platform average, which is a positive sign for generating further engagement throughout the remaining six months of the subscription. Amongst the high volume of views, we note that the Lipid Nanoparticles for Epidermal Self-Repair technology (2018-009) was a feature in our [10 most viewed technologies for Q3, 2018](#).





# Process of IP Marketing & Commercialization

## Benefits of marketing:

- Receive industry feedback regarding:
  - Strategic fit, level of risk, competitive edge, additional data requirements
- Identification of industry partner for sponsored research
- Identification of potential licensee

*Licensing is the primary vehicle for commercializing University-based technology*



# Process of IP Marketing & Commercialization

## Licensing of University IP:

- Grant rights to licensee to make, use, sell, or import the technology
- Compensation - Consideration for the grant of rights
- Diligence - Mechanisms for ensuring development of the technology
- University always retains right to publish and continue the research



# Process of IP Marketing & Commercialization

OTD partners with ORA to ensure IP is adequately protected in:

- Confidentiality agreements
- Material Transfer Agreements
- Sponsored Research Agreements
- Inter-Institutional Agreements



# Process of IP Marketing & Commercialization

## OTD Impact:

### Cumulative (prior 20 years)

- Evaluated 1,500+ pieces of innovation
- Filed 2,200+ patents
- Licensed 170 technologies
- Launched 35 companies

### Fiscal year 2017:

- Evaluated 64 pieces of innovation
- Filed 56 patents (28 patents issued!)
- Licensed/optioned 14 technologies



# Summary

- Submit invention disclosure to OTD: <http://www.ou.edu/otd/>
- Collaborative process between researchers and OTD to:
  - Protect IP (patents, copyrights, trademarks, know-how)
  - Fulfill the mission of the University
  - Benefit the Inventors, University, State, and Nation



# Office of Technology Development

<http://www.ou.edu/otd/>

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