

# **Federal Laboratory Consortium**

## **Introduction to Intellectual Property (IP 101)**

# Overview of Intellectual Property (IP)



# The Concept of Property

## Tangible

- Real Property
  - real estate
- Personal Property
  - vehicle

## Intangible

- Intellectual Property

# IP - Property

Similar to other property, it can be:

- owned
- sold
- assigned
- licensed
- willed
- in general, rights can be transferred

# Types of Intellectual Property

- **Patents**
- **Copyrights**
- **Trademarks**
- **Trade Secrets**

# IP Jurisdiction

- Article I, Section 8, Clause 8 of the U.S. Constitution
  - Authorizes Congress to enact patent and copyright laws
- Commerce Clause (Article I, Section 8, Clause 3)
  - Basis for Congress to regulate trademarks
- States retain concurrent jurisdiction to regulate IP under the 10<sup>th</sup> Amendment

# Intellectual Property Law and Policy

- Public policy goal is a balancing act:
  - Promote creation by giving property rights to the creators for their creativity
  - Provide public access in order to promote a competitive marketplace
  - Provides creator/owner right to exclude or control use of IP, a government granted monopoly

# Patent

- Temporary grant from U.S. Government which allows owner to EXCLUDE others from
  - making
  - using
  - offering to sell
  - or selling

invention that is claimed in patent document.

- Patent does not give patent holder any affirmative rights to make, use, etc.
- Patent protection is territorial, by country(ies)

# Types of Patents:

1. **Utility Patent**\*- most common and familiar
  - Process, machine, article of manufacture, composition of matter, improvement thereof (35 U.S.C. §101)
  - Duration 20 years after effective filing date
2. **Design Patent**- new ornamental appearance for a product (35 U.S.C. §171)
3. **Plant Patent**- for asexually produced plants (35 U.S.C. §161)

# **What is patentable**

(35 U.S.C. §101)

Invention must be at minimum be conception of an idea and reduced to practice and be:

- process
- machine
- manufacture
- composition of matter
- new and useful improvement

# Conditions of Patentability:

- **Useful** - some utility no matter how limited
- **Novel** - at least some new element not described by prior art or previously known or used (35 U.S.C. §102)
- **Non obvious** - unexpected or surprising development from view point of an individual ordinarily skilled in the art (35 U.S.C. §103)

# Prior Art

- Used to determine whether invention is novel or non-obvious
- Information available to the public in any form
  - before the effective filing date
  - that may be relevant to patent claims from view point of individual ordinarily skilled in the art
- Known relevant prior art must be disclosed to USPTO during patent prosecution. Inequitable conduct may invalidate patent.

# Invention May be Patentable Unless (35 U.S.C. §102a)

## Novelty Requirement

- Unless claimed invention was
  - patented or described in a printed publication, in public use, on sale, or otherwise available to the public before the effective filing date.
- Unless claimed invention was
  - described in a published patent application which
  - names another inventor
  - was filed before the claimed invention.
- Exceptions for disclosures by or obtained from inventors made 1 year or less before the effective filing date (35 USC 102b)

# Priority of Invention

- **U.S. and Rest of World**
  - U.S. law switched from “first to invent” to “first to file” effective on March 16, 2013
  - Leahy-Smith America Invents Act (AIA, passed on September 16, 2011)
    - Now consistent with the rest of the world

# Proper Patent Subject Matter:

- **Proper:**

- Organisms: modified seeds (Monsanto), mice
- Business Methods, e.g., Amazon “1 click”
- Processes
- Composition, e.g., drugs
- Articles of manufacture
  - e.g., complementary DNA (cDNA) (Myriad decision)

- **Improper:**

- Immoral
- Mathematical formulas
- Naked ideas
- Product of nature, e.g., isolated DNA (Myriad decision)

# Patent Prosecution Terms

- **Provisional Patent Application**

- Inexpensive way to establish a filing date
- Not reviewed by USPTO
- No patent is granted unless followed by standard patent application
- Good for one year

- **Regular Patent Application**

- Standard patent application in the Patent Office
- May refer to a previously filed provisional application for priority date

- **PCT (Patent Cooperation Treaty)**

- PCT patent application is called an international application
- Establishes a filing date in all contracting states

- **National Stage Filing**

- After PCT application to obtain patent rights in individual countries

# Copyrights ©

A **Copyright** is a form of protection provided to the authors of “original works of authorship” including literary, dramatic, musical, artistic, and certain other intellectual works, both published and unpublished.



# Copyright Owner's Rights:

The 1976 Copyright Act generally gives owner of copyright **exclusive right to reproduce copyrighted work, to prepare derivative works, to distribute copies or phonorecords** of copyrighted work, to **perform copyrighted work publicly**, or to **display copyrighted work publicly**.

# Copyright Subject Matter (17 U.S.C. §102a)

An exclusive right to reproduce, distribute, perform, display, or prepare derivative works of copyrightable material such as:

- Audiovisual work
- Musical works
- Software
- Literary works
- Architectural works
- Motion pictures
- Sound recordings

# Copyright Requirements:

- **“Authorship”** - undefined under the Act
  - But includes individuals and legal entities
- **“Fixed in any tangible medium of expression”**
  - “Sufficiently permanent or stable to permit it to be perceived...for more than transitory duration”
  - “directly or with aid of a machine or device.”

# Copyright Duration:

- Individual author: life of the author plus 70 years
- Joint Work: life of last to die author plus 70 years
- Made for Hire works:
  - The shorter of:
    - 95 years from the first publication OR
    - 120 years from creation

# Copyrights and Federal Agencies

- Copyright protection not available for any work of U.S. Government employees as part of their official duties (17 U.S.C. § 105)
- The U.S. Government may receive and hold copyrights transferred to it

# Trade Secrets

- Information that has economic value because it is generally not known and is subject to reasonable efforts to keep secret.

# Trade Secrets Advantages

- May cover ideas, processes, algorithms, information:
  - that may not qualify as patentable
  - that are not subject to copyright protection
- Do not require disclosure
- Duration is indefinite, as long as secret is kept

# **Trade Secrets May Include:**

- Business and financial information
- Software
- Algorithms
- Databases
- Processes/Ideas
- Formulas and recipes
  
- May overlap with patentable subject matter

# How to Protect Trade Secrets:

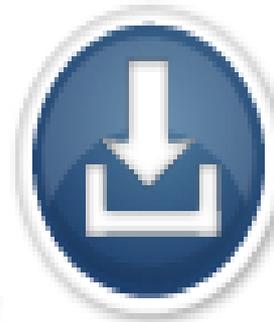
- Limit access to information
- Communicate to individuals that have access to information:
  - Sign non-disclosure agreements (confidentiality and employment agreements)
  - Stamp information
  - Screen talks and publications (but be careful of First Amendment)

# Trade Secrets and Federal Labs

- Common Terminology:
  - “Confidential Information” - “Proprietary Information”
- 18 U.S.C. §1905 - Federal officers and employees can be fined and imprisoned for an unauthorized disclosure of trade secrets
- 18 U.S.C. § § 1831-1839 (Economic Espionage Act of 1996)  
Theft of a trade secret may be considered espionage
- States’ laws prohibiting unauthorized disclosure of trade secrets (Uniform Trade Secrets Act (USTA))

# Trademark <sup>TM</sup> ® SM

- Any word, term, symbol, device, sound, colors or any combination of these that indicates source and quality of goods services.
- TM, unlike patents, can be renewed forever as long as they are being used in commerce.
- For example: Note chime for NBC, McDonald's double arch, MSN's butterfly, shape of Coca Cola bottle.



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# Trademark Law

- **Common Law**
- **State Law**
  - **registration**
- **Federal law (The Trademark Act of 1946, 15 § U.S.C. 1051, *et seq*, as amended “Lanham Act”).**
  - **registration:**
    - **use**
    - **intent to use**

# IP in the Public Domain

- Works in the public domain are those in which the intellectual property rights do not exist, have expired, forfeited, or are inapplicable
- One can use without permission formerly protected IP without infringing

# IP in the Public Domain

- Goal of private IP owner/creator is generally to keep IP out of public domain and to retain right to exclude as long as possible
- Government funding or research goal is often for IP to be in public domain to benefit public
  - Human Genome Project- U.S. Government and Celera Genomics

# IP Infringement

- Comparable to trespass on tangible property
- Violating the IP owner's exclusive rights
- Using, selling, reproducing, distributing, displaying, or performing without permission

# Association for Molecular Pathology v. Myriad Genetics

- Unanimous Supreme Court decision June 13, 2013
- Myriad discovered precise location and sequence BRCA1 and BRCA2 genes. BRCA mutations increase risk of breast and ovarian cancer
- **Court Held:**
  - Human genes, isolated DNA, cannot be patented, considered products of nature
  - Separating gene from surrounding genetic material is not act of invention
  - Synthetic DNA, complementary DNA (cDNA), created in the laboratory, can be patented

# Bowman v. Monsanto Co. et al.

- Unanimous Supreme Court decision May 13, 2013
- Monsanto imposed restrictions on farmers purchasing *Round Up Ready* soybean seeds, allowing only single season use
- Farmer Bowman replanted *Round Up Ready* seeds obtained from grain elevator  
Was patent exhausted?
- Patent exhaustion doctrine – initial authorized sale of patented item terminates all patent rights to that item

## **Court Held:**

- Replication has never been a “use” protected by exhaustion doctrine otherwise the patent monopoly would extend not for 20 years but for only one transaction
- Patent exhaustion doctrine does not enable farmer to make additional patented soybeans without Monsanto’s permission
- Purchaser of patented machine does not acquire any right to construct another machine

# Mayo v. Prometheus

- Unanimous Supreme Court decision March 20, 2012
- Prometheus patented a method to help doctors find the optimal drug dose level by using correlations between drug and metabolite in patients' blood
- **Court Held:**
  - Medical tests that rely on correlations between drug dosages and treatment are not eligible for patent protection, considered a natural law
  - Natural laws may not be patented standing alone or in connection with processes that involve well-understood, routine, conventional activity

# Stanford v. Roche

- Supreme Court 7–2 decision June 2011
- **Background:** Roche sold the Polymerase Chain Reaction (PCR)-based HIV kits since 1996.
  - Stanford sued Roche in 2005 for royalties estimated at \$250 million.
  - Stanford said it owned the patents because the Bayh-Dole Act of 1980 awards patent ownership first to universities and other entities receiving federal funding, then to the federal government, and finally to inventors.
- **Issue:** Were patent rights transferred when university researcher worked at Cetus, a company later acquired by Roche
- **Court Held:**
  - Cetus winning agreement “I hereby assign” vs Stanford losing agreement “I agree to assign.”
  - The ruling makes it clear that institutions have to spell out how inventions can be assigned.

# Moseley dba Victor's Little Secret v. Secret Catalogue, Inc.

- Supreme Court Decision - March 4, 2003
- **Background:**
  - Dilution is the lessening of the capacity of a famous mark to identify and distinguish goods or services.
  - Victoria's Secret filed suit against Victor's Little Secret, alleging the dilution of famous marks under the Federal Trademark Dilution Act (FTDA) of 1995.
  - The FTDA's legislative history - statute's purpose is to protect famous trademarks from subsequent uses that blur the mark's distinctiveness or tarnish or disparage it, even absent a likelihood of confusion.
- **Court Held:**
  - The FTDA requires proof of actual dilution not just likelihood of harm.
  - Mere fact that consumers mentally associate the junior user's mark with a famous mark is not sufficient to establish actionable dilution.

# Resources

- U.S. Patent and Trademark Office:  
<http://www.uspto.gov/>
- U.S. Copyright Office – part of Library of Congress  
<http://www.copyright.gov/>
- Cendi publications:  
<http://www.cendi.gov/publications/04-8copyright.pdf>
- Trademark guidebook:  
<http://www.uspto.gov/trademarks/basics/BasicFacts.pdf>
- Federal Laboratory Consortium (FLC)  
<http://www.federallabs.org>

## IP Summary Table For Reference

<b>UTILITY PATENT</b>	<b>COPYRIGHTS</b>
<p><b>Definition</b> A US patent is a limited duration property right relating to an invention, granted by the USPTO in exchange for public disclosure of the invention. The property right is the right to exclude others from making, using, offering for sale, or selling the invention in the United States or “importing” the invention into the United States.</p>	<p><b>Definition</b> A form of protection provided by US law for "original works of authorship".</p>
<p><b>Patentable Subject Matter</b> Process, machine, manufacture, composition of matter, New and useful improvement</p>	<p><b>Material Copyrighted</b> Original works of authorship fixed in any tangible medium of expression, include: Literary works, Musical works, Pantomimes, Dramatic works, Pictorial, Graphic sound recordings, Compilations, Derivative works</p>
<p><b>Not Patentable</b> Laws of nature, physical phenomena, and abstract ideas</p>	<p><b>Material Not Copyrighted</b> Idea, procedure, process, system, method of operation, concept, principle, discovery, names, titles, short phrases, slogans, lettering, coloring</p>
<p><b>Patent Owner</b> Inventor(s) unless there is agreement to assign</p>	<p><b>Copyright Owner</b> Author(s) unless there is agreement to contrary and except for “work for hire”</p>
<p><b>Initial Cost</b> USPTO fees and attorney costs - \$10,000 at very low end and \$20,000 plus for more complex patents</p>	<p><b>Initial Cost</b> \$35 electronic registration fee minimum</p>
<p><b>Granting Gov Agency</b> U.S. Patent and Trademark Office (<a href="http://www.uspto.gov/">http://www.uspto.gov/</a>)</p>	<p><b>Granting Gov Agency</b> U.S. Copyright Office – part of Library of Congress (<a href="http://www.copyright.gov/">http://www.copyright.gov/</a>)</p>
<p><b>Duration</b> 20 years from the earliest filing date of the application on which the patent was granted</p>	<p><b>Duration</b> Federally registered copyright for joint works - 70 years after last surviving author’s death Works made for hire – the sooner of 95 years from first publication or 120 years from date of creation</p>
<p><b>Remedies for Infringement</b> Injunction against future infringement; compensatory damages no less than a reasonable royalty; up to treble damages if infringement is willful; attorney fees in exceptional case</p>	<p><b>Remedies for Infringement</b> Actual damages or statutory damages; Injunction against future infringement; infringer’s profits; attorney fees</p>
<p><b>Territory</b> U.S., foreign patents can be obtained through Patent Cooperation Treaty (PCT)</p>	<p><b>Territory</b> U.S., the Berne convention may be available for foreign registration</p>
<p><b>US Gov Use</b> US Gov patents inventions and receives patent assignments, for Government use, from government funded contractors, universities, and grantees. Licenses US Government inventions</p>	<p><b>US Gov Use</b> Does not copyright employees’ works but may receive and hold copyrights</p>

## IP Summary Table For Reference

<b>TRADEMARKS</b>	<b>TRADE SECRETS</b>
<p><b>Definition</b> A trademark is a word, phrase, symbol, and/or design that identifies and distinguishes the source of the goods of one party from those of others.</p>	<p><b>Definition</b> A trade secret is a formula, practice, process, design, instrument, pattern, or compilation of information which is not generally known or reasonably ascertainable, by which a business can obtain an economic advantage over competitors or customers.</p>
<p><b>Trademark Material</b> Suggestive marks to evoke and suggest positive associations; Arbitrary marks are common words used in unexpected and completely non-descriptive ways; Geographically descriptive marks</p>	<p><b>Trade Secrets May Be</b> Business and financial information, Software, Algorithms, Databases, Processes/Ideas, Formulas and recipes</p>
<p><b>Cannot be Trademarked</b> Generic terms that name a type of product or service rather than a specific product; merely descriptive</p>	<p><b>Not Trade Secret</b> Anything publicly disclosed</p>
<p><b>Trademark Owner</b> The first to use the mark in commerce, or the first to file an “intent to use” application followed by use within prescribed time period</p>	<p><b>Trade Secret Owner</b> The party that gains economic value from the secret and controls access and use</p>
<p><b>Initial Cost</b> USPTO fees and attorney costs - \$1500 approximately and up</p>	<p><b>Cost of Trade Secret</b> Cost of maintaining secret</p>
<p><b>Granting Gov Agency</b> U.S. Patent and Trademark Office (<a href="http://www.uspto.gov/">http://www.uspto.gov/</a>)</p>	<p>No Granting Gov Agency</p>
<p><b>Duration</b> Registration for initial 10 year term. May be renewed for successive 10 year terms in perpetuity as long as mark is used</p>	<p><b>Duration</b> Duration is indefinite, as long as secret is kept</p>
<p><b>Remedies for Infringement</b> Injunction against future infringement; infringer’s profits; actual damages, which may be trebled; attorney fees in exceptional case</p>	<p><b>Remedies for Infringement/Unauthorized Disclosure</b> Damages, profits, reasonable royalties, an injunction, and attorney fees if misappropriation is malicious and willful. Fines and imprisonment for criminal conviction.</p>
<p><b>Territory</b> U.S., foreign registration can be obtained through the Madrid Protocol</p>	<p><b>Territory</b> Current US and state law includes the Economic Espionage Act of 1996 (18 U.S.C. 1831-1839) which makes theft of trade secret a federal crime and the Uniform Trade Secrets Act (USTA) adopted by most states</p>
<p><b>US Gov Use</b> US Government trademarks words, phrases, symbols, and designs.</p>	<p><b>US Gov Use</b> US Government does not maintain their own trade secrets but may keep their own information confidential</p>