

# Patents & Pizza

Process & Policy

Oct. 22, 2014

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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.



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# Types of Intellectual Property

- Trademarks
- Copyright
- Trade Secrets
- **Patents**



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# 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.



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# OTC Manages UMD's Patents

- IP disclosure ≠ automatic patent
- To disclose to OTC:
  - <http://otc.umd.edu/disclose-invention>
- The University engages outside counsel to prosecute patent applications before the USPTO
- OTC manages process



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# 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



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# UMD patents

US000623243B1

(12) **United States Patent**  
**Hodos** (10) Patent No.: **US 6,623,243 B1**  
 (45) Date of Patent: **Sep. 23, 2003**

(54) **MINIMIZATION OF MOTION SMEAR: AN APPROACH TO REDUCING AVIAN COLLISIONS WITH WIND TURBINES**

(75) Inventor: **William Hodos**, Chevy Chase, MD (US)

(73) Assignee: **University of Maryland, College Park, MD (US)**

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/959,566**  
 (22) PCT Filed: **Apr. 28, 2000**  
 (86) PCT No.: **PCT/US00/11682**  
 § 371 (c)(1),  
 (2), (4) Date: **Oct. 30, 2001**  
 (87) PCT Pub. No.: **WO00/66889**  
 PCT Pub. Date: **Nov. 9, 2000**

Related U.S. Application Data  
 (60) Provisional application No. 60/131,808, filed on Apr. 30, 1999.  
 (51) Int. Cl. <sup>7</sup> **F03D 1/06; F03D 11/00**  
 (52) U.S. Cl. **416/61; 416/146 R; 351/237**  
 (58) Field of Search **416/5, 61, 62, 416/146 R; 351/205, 206, 211, 214, 223, 237, 359/522**

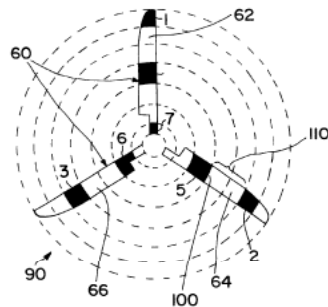
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 JP 56-113096 A \* 9/1981 ..... 416/5  
 JP 5-202890 A \* 8/1993 ..... 416/5  
 \* cited by examiner

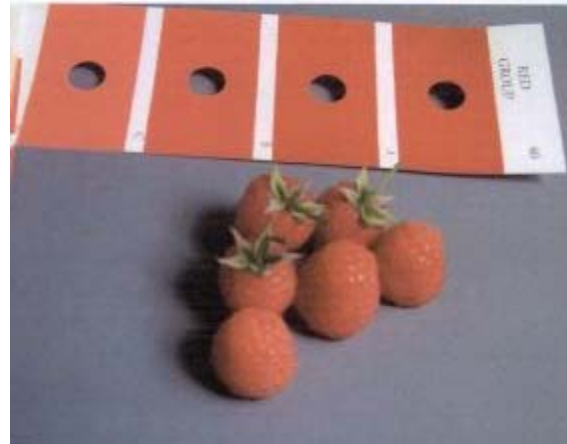
Primary Examiner—Christopher Venier  
 (74) Attorney, Agent, or Firm—Dykema Gossett, PLLC

(57) **ABSTRACT**  
 A method and apparatus for reducing avian collisions with wind turbines 70 includes a design or pattern 60 placed on the rotor blades 60 of a wind turbine 70 for reducing the motion smear of the image of the rotor blades 60 on the bird's retina 30. When the motion smear on the bird's retina 30 is reduced, the bird 10 is capable of detecting the presence of the rotor blades 60 more easily, thus allowing the bird 10 to re-direct its flight path and avoid colliding with the wind turbine 70. The design principle is that a pattern placed in a given location on one rotor blade 60 is not repeated in the same location on any other rotor blades 60 on the wind turbine 70.

21 Claims, 7 Drawing Sheets



Method to reduce avian collisions



Raspberries

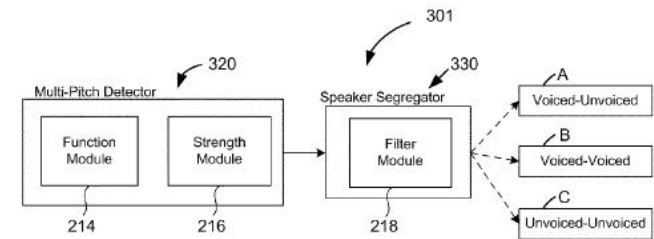


FIG. 3

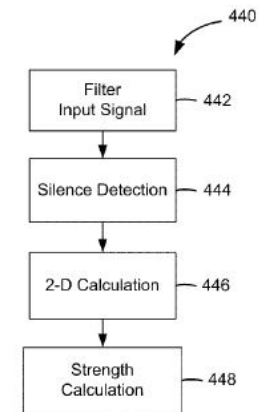


FIG. 4

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**



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# 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**



# 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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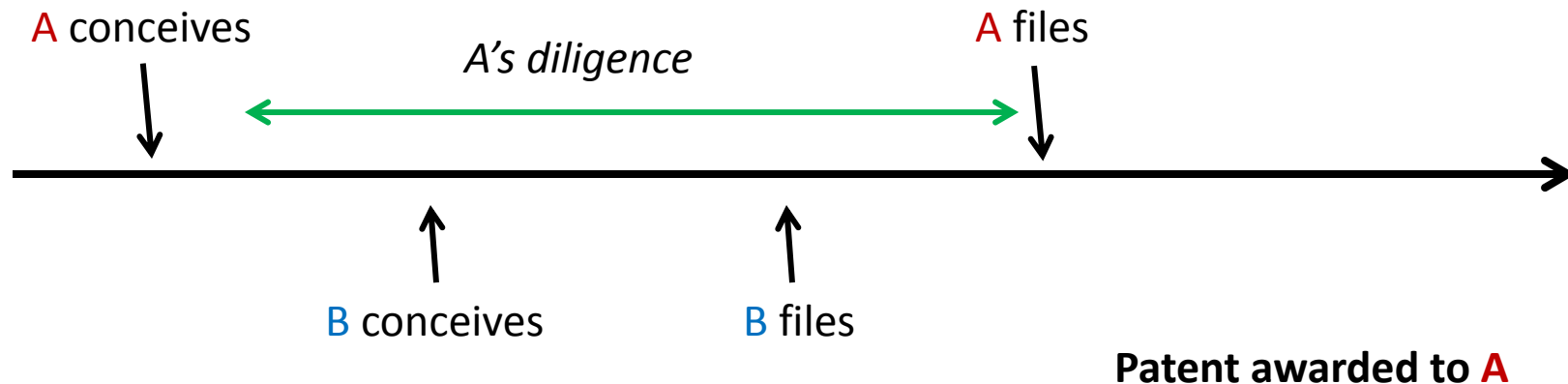
# Novelty: first-inventor-to-file cont.

- 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 conveys first and is diligent to reduce invention to practice entitled to patent even if another files first



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# First-inventor-to-file

Same invention independently conceived by separate inventors



Patent awarded to **A**



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# First-inventor-to-file cont.

Same invention independently conceived by separate inventors



Patent awarded to **B**



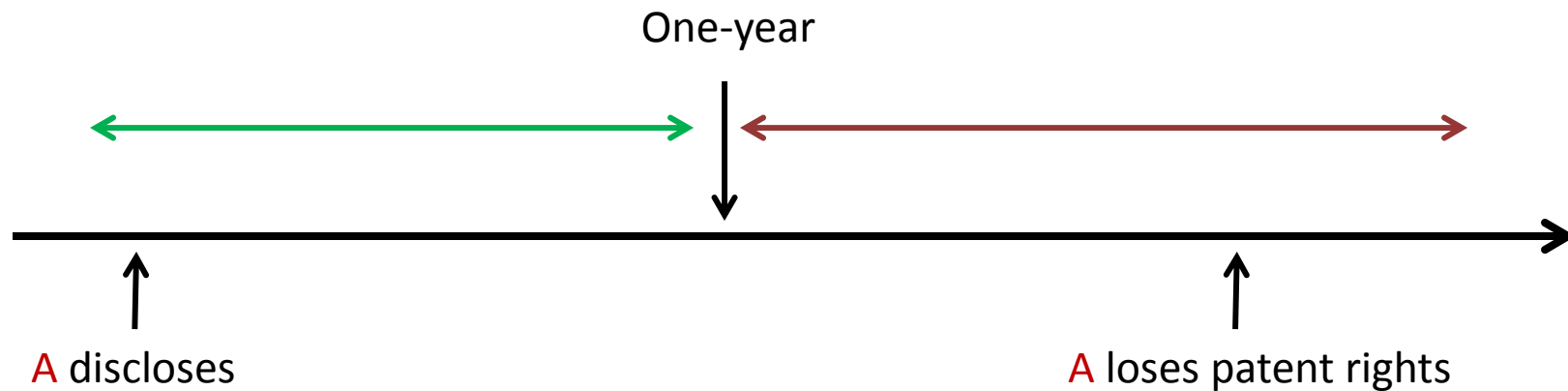
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# First-inventor-to-file cont.

Inventor publicly discloses own invention:

1-year grace period from own disclosure to file patent application

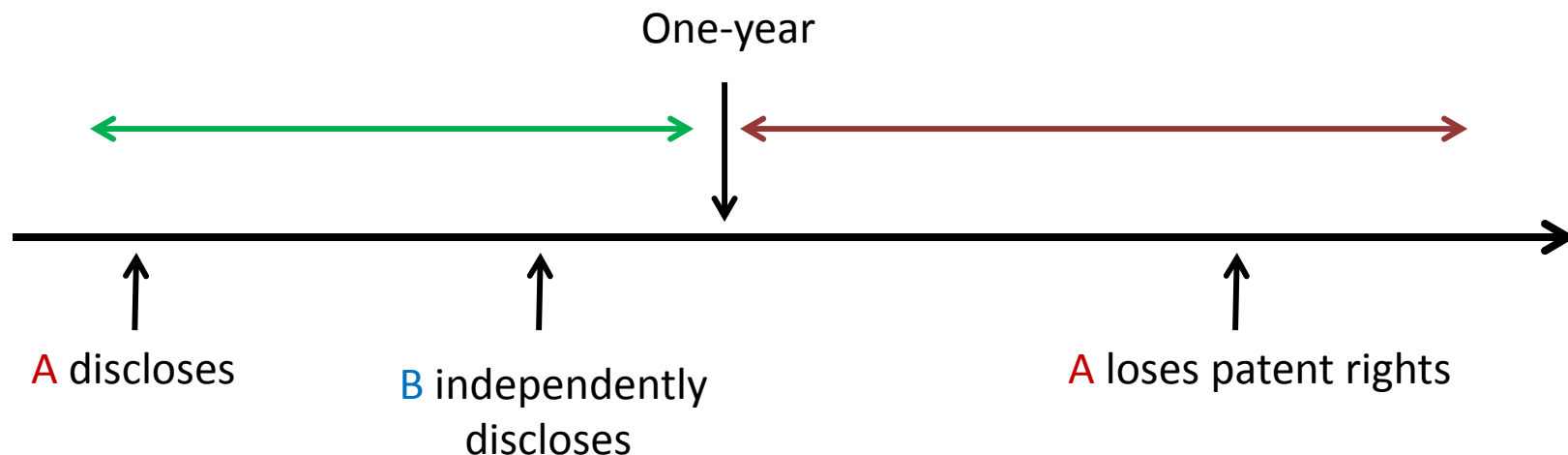


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# First-inventor-to-file cont.

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



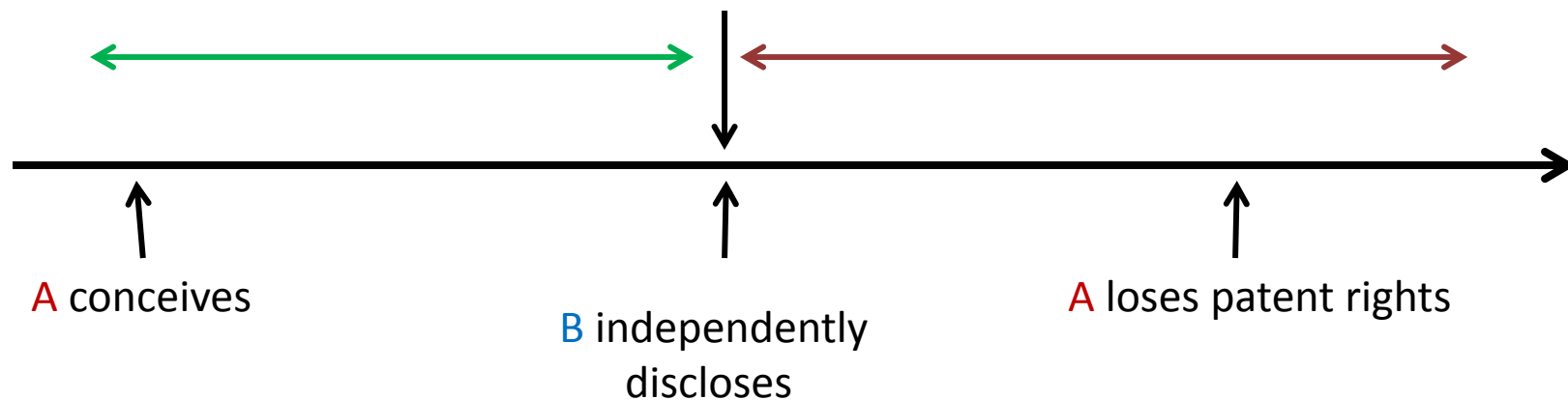
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# First-inventor-to-file cont.

3<sup>rd</sup> party public disclosure may forfeit first inventor's patent rights

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



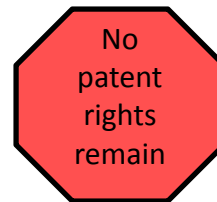
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# Novelty, cont.

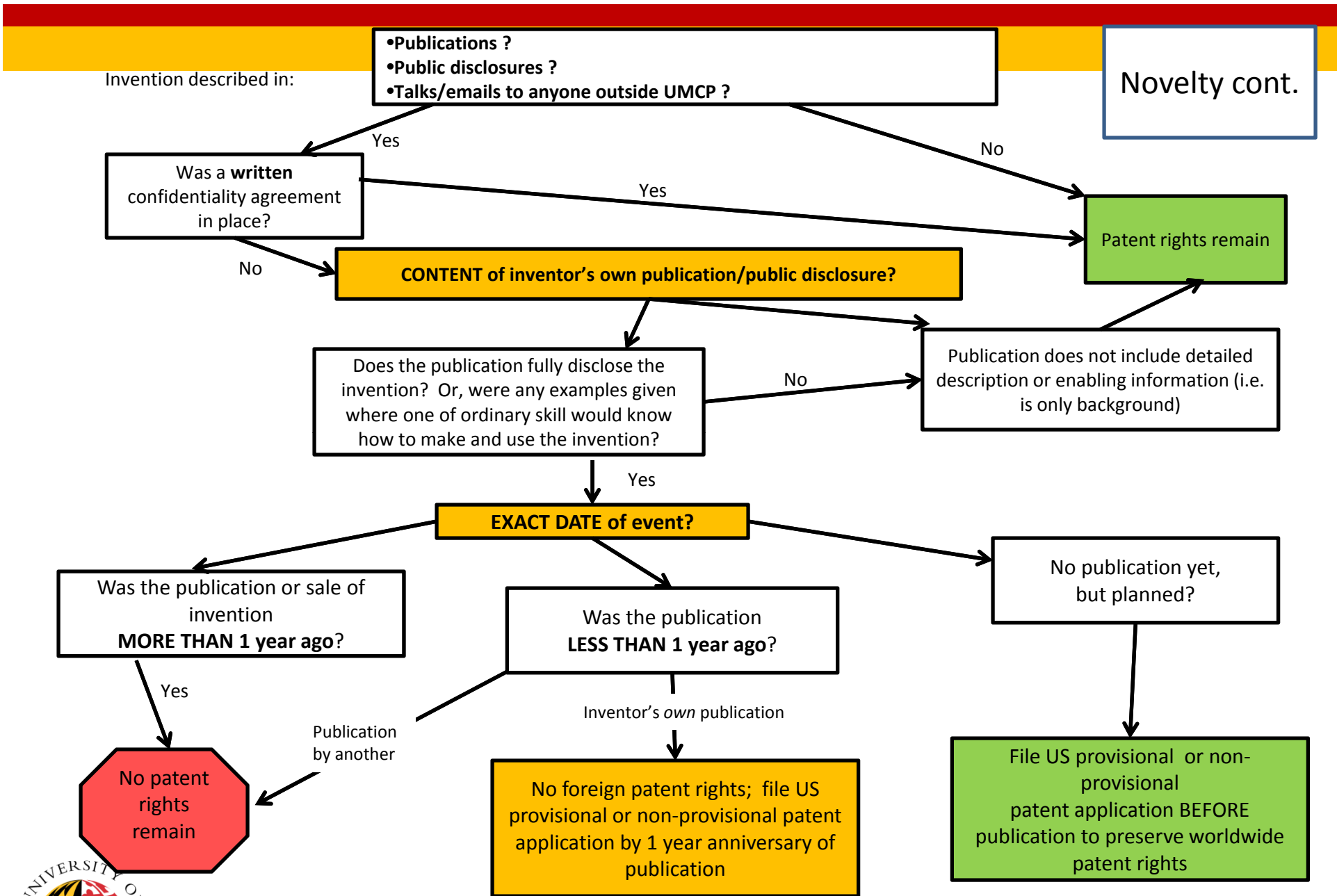
- Invention already patented?
- Described in a printed publication?
- In public use?
- On sale?
- Otherwise available to the public?

If yes to any, general rule:



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Novelty cont.

Patent rights remain

CONTENT of inventor's own publication/public disclosure?

Does the publication fully disclose the invention? Or, were any examples given where one of ordinary skill would know how to make and use the invention?

Publication does not include detailed description or enabling information (i.e. is only background)

EXACT DATE of event?

Was the publication or sale of invention **MORE THAN 1 year ago?**

Was the publication **LESS THAN 1 year ago?**

No publication yet, but planned?

No patent rights remain

No foreign patent rights; file US provisional or non-provisional patent application by 1 year anniversary of publication

File US provisional or non-provisional patent application BEFORE publication to preserve worldwide patent rights



# 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)



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# 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

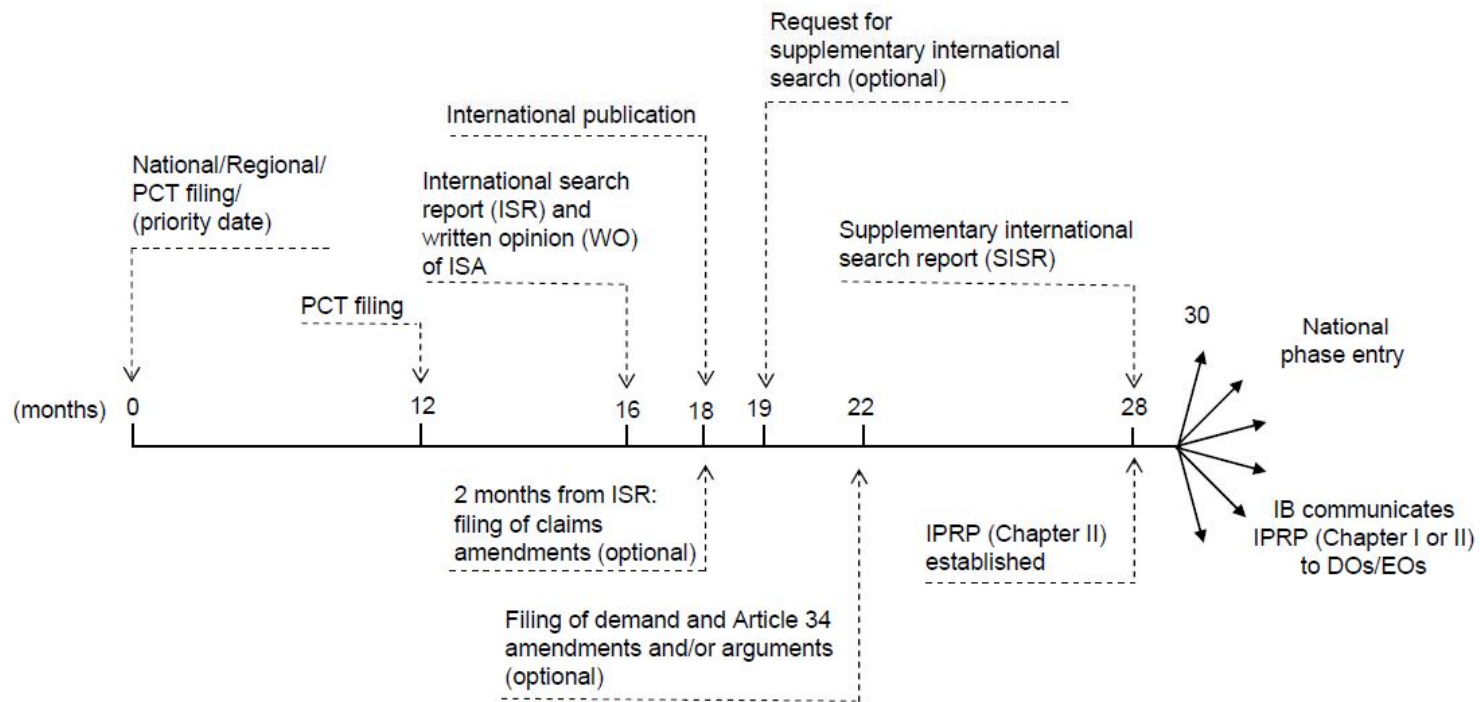
- Must file BEFORE any public disclosure
- UMD loses lots of foreign patent rights because faculty publish an article, then file an invention disclosure
- File within 1 year after U.S. application filed
- Published 18 months from priority date
- National stage applications: country by country patent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



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# PCT TIMELINE



**WIPO**  
WORLD  
INTELLECTUAL PROPERTY  
ORGANIZATION

Timeline-2  
20.05.10



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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

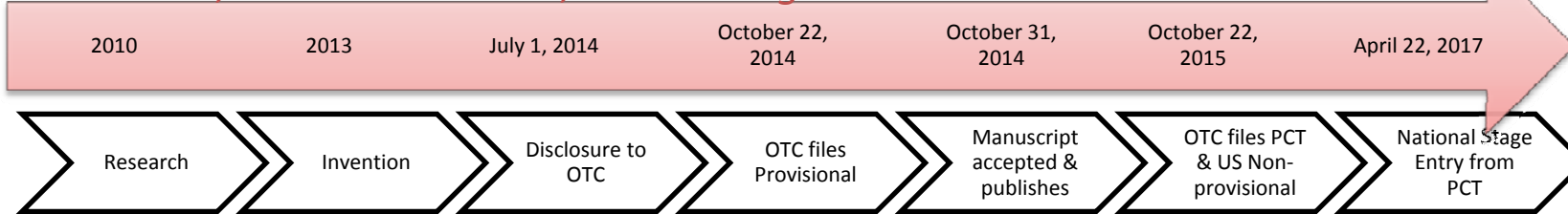


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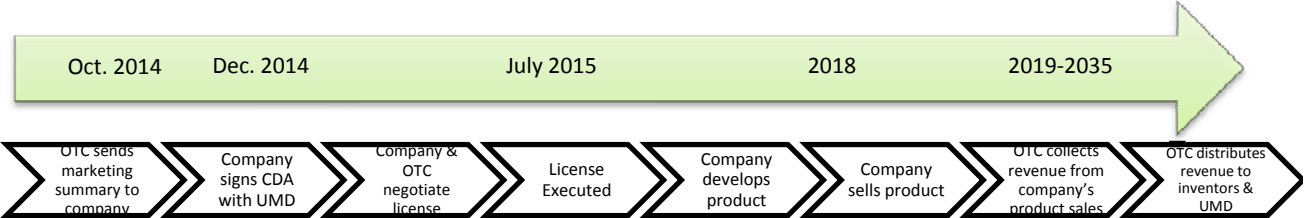
# Process Example

## Invention, Disclosure to OTC, Initial Filing

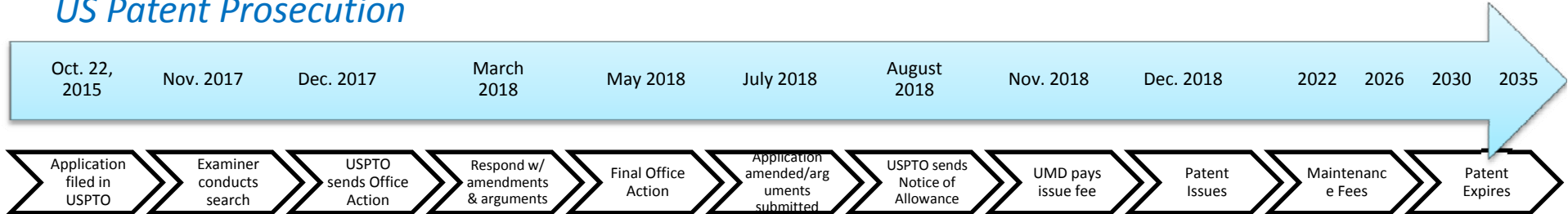


*In light of manuscript submitted to journal*      *Invention appears patentable & Licensee interest*      *Foreign countries not entered (key market in US)*

## Marketing & Licensing



## US Patent Prosecution



# 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**



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# Patent searching

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





# 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)



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# 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



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# 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



# 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



# 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



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# 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



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# Questions?

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**BIOSCIENCE DAY PANEL & PROFESSOR VENTURE FAIR**

**NOVEMBER 20, 2014**

**10-noon**



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