

Technology Transfer at HBCUs



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INFORM

What is Intellectual Property?

Intellectual Property (IP)= creation of the mind

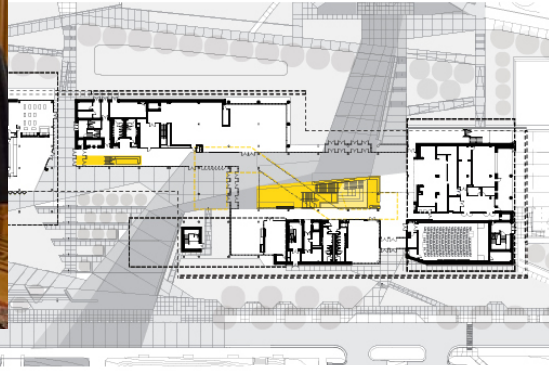
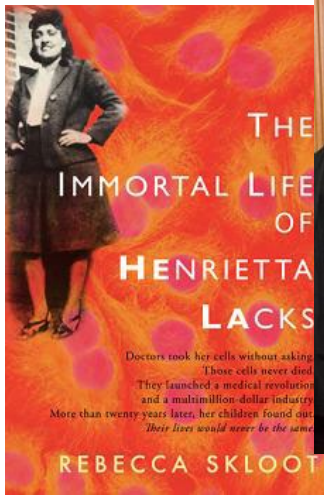
- inventions
- literary and artistic works
- symbols, names, images, and designs

WHY can you protect IP?

United States Constitution, Article 1, Section 8:

Allows Congress 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.”

Copyright ©

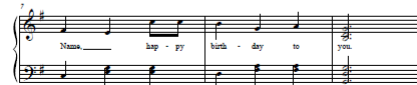
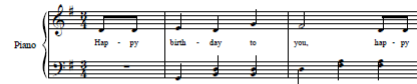


1|1 FIRST FLOOR



Happy Birthday To You

Traditional



```
<h1>Computer Code</h1>
<img src='../image/story/2013/08-computercode.jpg' width='700' height='394' id='vplayer'>
<script type='text/javascript' src='jquery-1.7.1.min.js'></script>
<script type='text/javascript' src='videoplayer.js'></script>
<script type='text/javascript'>
  var publishedDate = "20130326"; //reverse date format
  var origtitle = "Did you know kids are learning about computer coding?";
  var origurl = publishedDate+"_computercode_hi.mp4";
  videoplayer.smooth = true;
  videoplayer.wmode = "opaque";
  videoplayer.embedPlayer('vplayer',origurl,null,null,origtitle,false);

  //to handle the title overlay.
  videoplayer.onStateChange = function(vplayer.state){
  if (state=="PLAY_STATE") {
    $("#kiosk h1").fadeOut();
  } else if (state=="STOPPED_STATE" || state=="PAUSE_STATE") {
    $("#kiosk h1").fadeIn();
  }
  }
</script>
```

Who owns the copyright?

“created on your own”

- Not in scope of employment
- Not with an employee
- No Substantial Use of University resources



Bound by the terms of agreement

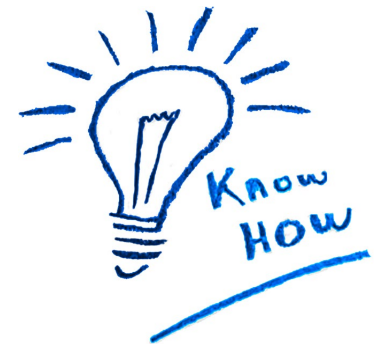
- ❑ ‘Work for hire’ = **employer-owned**
- ❑ If not explicit, then = **creator-owned**



What is a trade secret?

Information having economic value from NOT being publicly known

- formula, pattern, compilation, device, method, technique, recipe, customer list, process



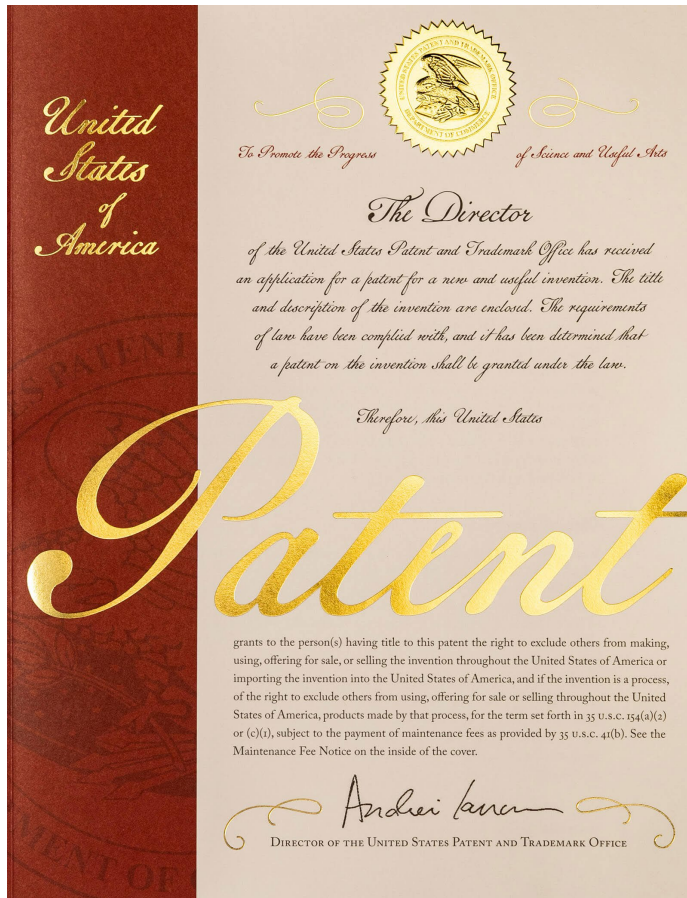
How valuable is a trade secret?

- Can last forever
 - No requirement to share
- Only valuable to the extent it is kept secret



Is a trade secret consistent with a university mission?

What is a Patent?

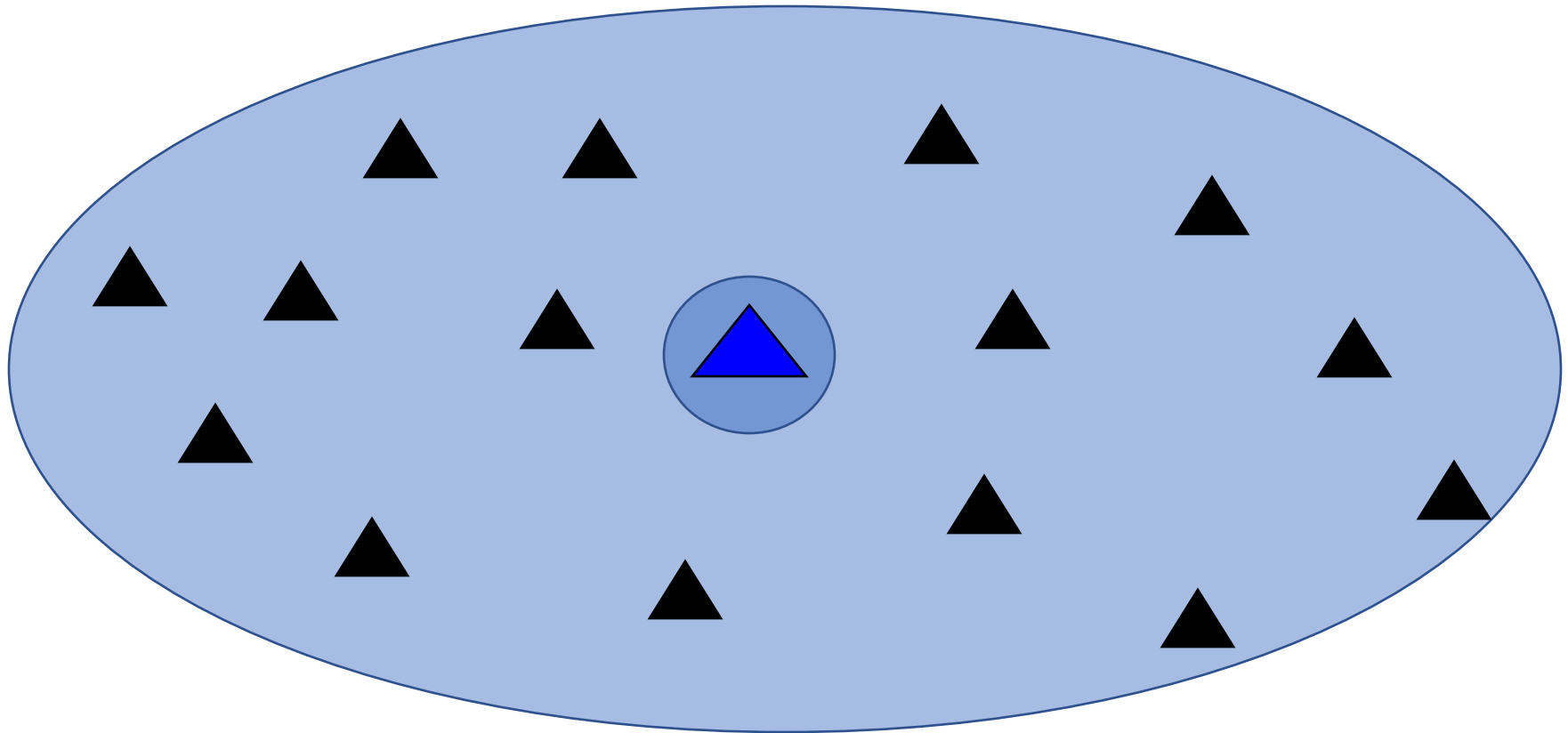


A **contract** between the patent holder and the government

- inventor provides a detailed disclosure of the “invention”
- Patent holder receives ~20 years to exclude others from
 - making
 - using
 - offering for sale
 - selling
 - importingthe claimed invention
- US patent rights **stop** at US border

Drafting a patent application

Support full claim scope



What Do I Need for a Patent?

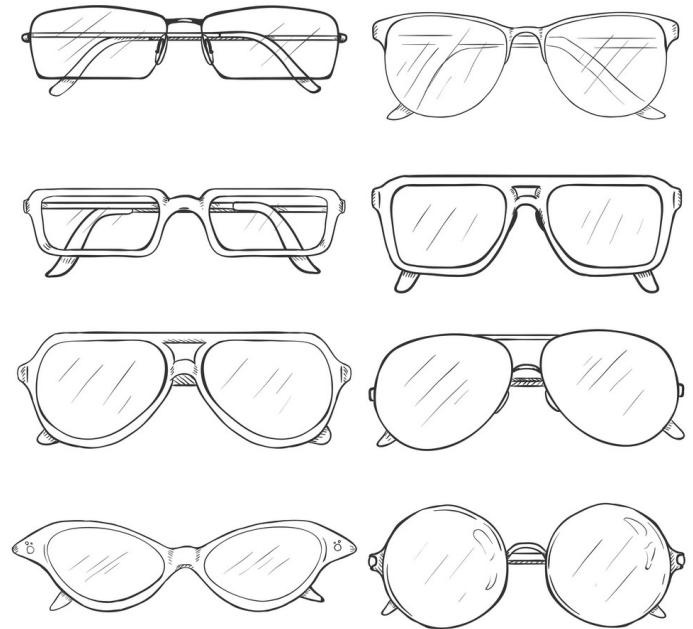
▶ Invention

- **Utility** = process, machine, manufactures, composition of matter or improvements
- **Design** = ornamental (what does something LOOK like?)
- **Plant** = asexually reproduced new plant species

- ❖ Useful
- ❖ Novel
- ❖ Non-Obvious



U.S. PP7197
U. Minnesota



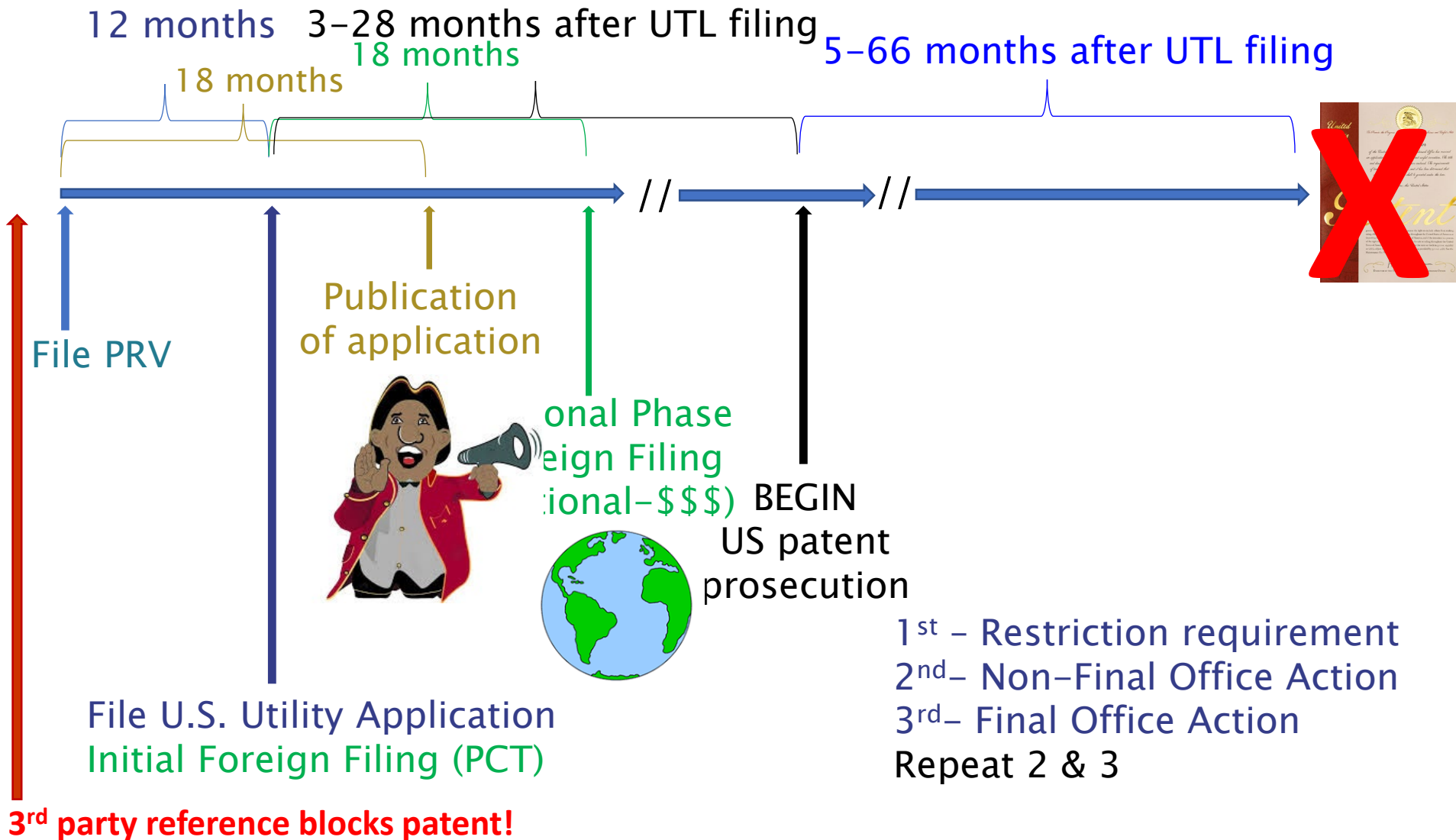
▶ Application

- ❖ Written-description
- ❖ Enabled
- ❖ Best Mode

▶ Money

- ❖ \$10,000 - \$75,000 (usually \$20-\$40K)

Patience!



Should you search for 3rd party art?

YES! As well as you can

❖ Scientific literature

- GoogleScholar
- ISI Web of Science
- Proquest- theses + dissertations
- ScienceDirect
- Review articles
- Bibliographies

❖ Federally funded projects

- projectreporter.NIH.gov
- NSF.gov/awardsearch
- DODgrantawards.dtic.mil/grants/#/home
- pamspublic.science.ENERGY.gov
- www.sbir.gov/sbirsearch/award/all

❖ National/regional meetings

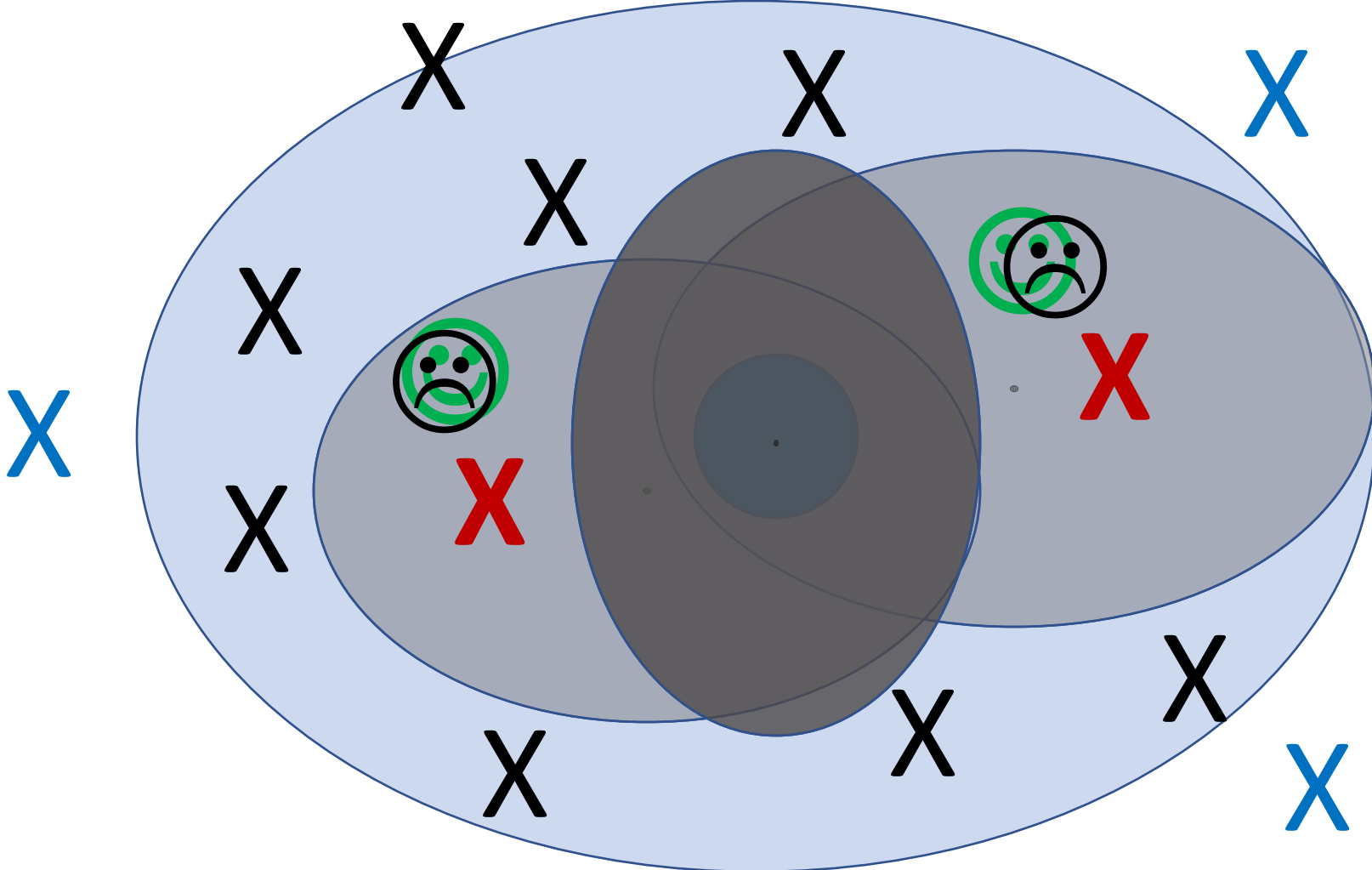
- Posters, abstracts (lunches, dinners and/or zoom meetings!)

❖ Patents- applications and issued patents

- GooglePatents

Patents are Business Tools

Drafting a patent application
= protect commercial embodiments



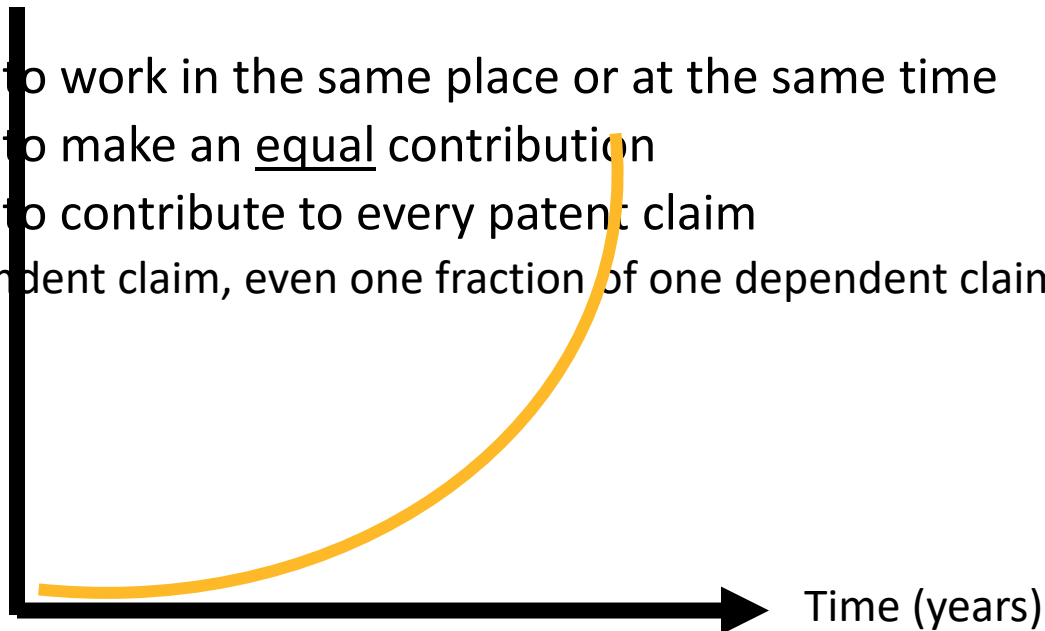
Who is an inventor?

□ *Different than authorship*

- listed order has no legal significance
- **not** a 'set of hands'

▪ Contribute to conception of the operative claimed invention

- Do not have to work in the same place or at the same time
- Do not have to make an equal contribution
- Do not have to contribute to every patent claim
 - One dependent claim, even one fraction of one dependent claim





Should the University apply for a patent?

Commercializability NOT just technical merit

- ❖ What market need is addressed?
- ❖ Is invention better than current product/service?
 - Is invention easily adopted?
 - What are competing price points?
- ❖ What is the size of the market?
 - Is there an established customer base?
- ❖ How long will the invention be relevant?
 - Time to...Get a patent? Find a partner? Get to market?



Can university researchers get a patent?

Yes! Patents align with funding priorities

NIH = Is the project original and Innovative?

NSF = Targeting transformative research

Knowing the field well leads to:

❖ Stronger proposal/patent application

- Distinguish this work from others
- Learn what is going on in companies (18 months ago)
- Have you already been scooped?
- Identify additional aspects to research/claim

❖ Identify other players

- Potential licensees/competitors

❖ Identify dominating work

- Can you practice the invention?
- Does your work fill a gap in someone else's?

When is a patent/application valuable?

Some value every step in the process

- ❖ Provisional Patent Application
 - Freedom to talk to prospective parties
 - Vote of confidence from university (some expense)
- ❖ Utility Patent Application
 - Typically published (and therefore searchable)
 - Bigger vote of confidence from university (more expensive)
 - VC diligence = “people count better than they read”
- ❖ Issued U.S. Patent
 - Pro- scope of patent protection is clear
 - Con- scope of patent protection is clear
- ❖ Patent Families (and picket fences)
 - Platform technologies true sweet spot
 - **Strongest position** = issued US patent + pending child
(*novelty AND opportunity*)



Consider a dominating patent

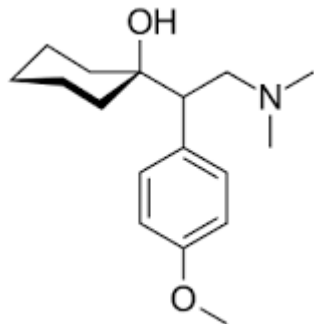
'Freedom to Operate'

Your patent claim

- A method for decreasing the number, duration, frequency, or intensity of **gout flares** comprising **administering venlafaxine** to a patient in need thereof.

Prior art patent claim:

- A compound of formula:

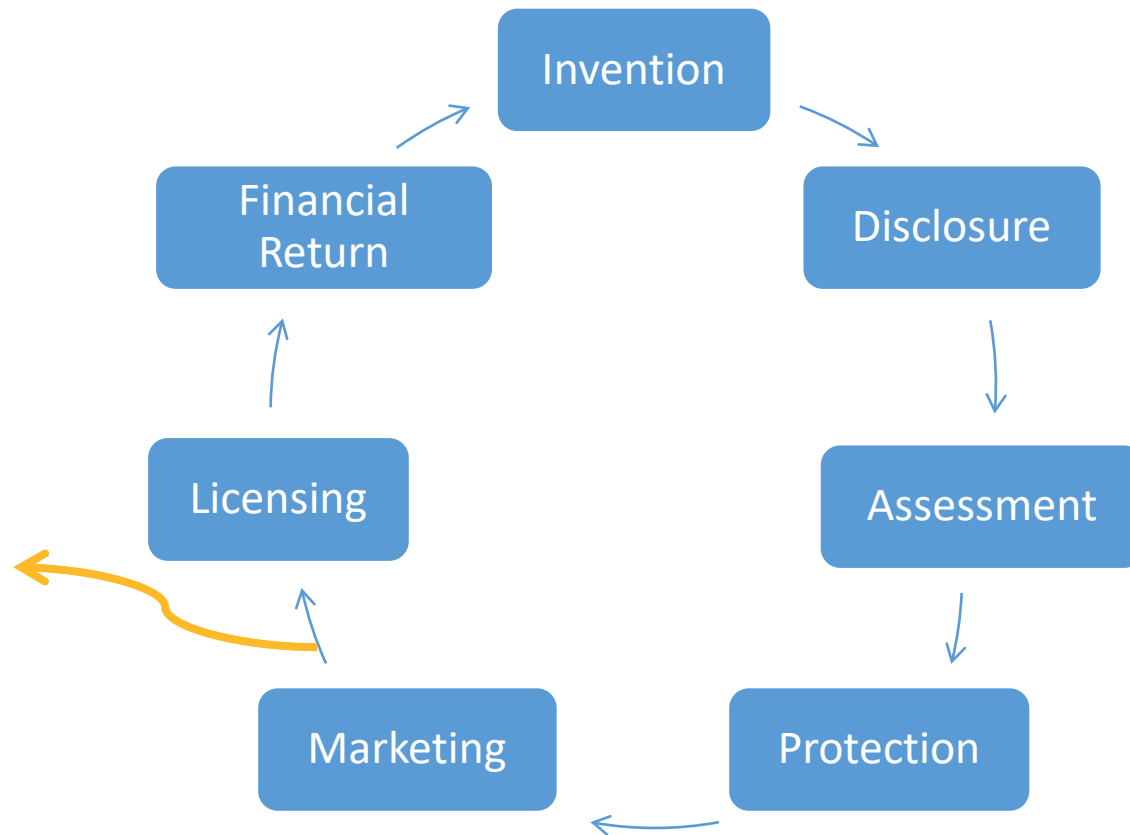


Uh oh! This is venlafaxine!

Your invention is *novel and non-obvious*- you can get a patent!

Your invention cannot be practiced without **infringing** earlier valid patent claim.

You have a patent/application. You understand the landscape. What's next?



Find a
commercial
partner
OR
Create one

Finding a commercial partner

Researchers as prospectors/sales people

- ❖ Consider your contacts from regional/national meetings
- ❖ Consider your prior art search (Journals + patents + federal awards)
 - What companies are active in your space?
 - Who are effective points of contact in those companies?
 - Large companies may not be nimble or willing to scale up benchtop research
 - What is your pitch? Why should the company be interested in your tech?

Creating a commercial partner

Researchers as entrepreneurs

❖ Consider relevant University policies

- IP policy
- COI Policy
 - “COI and Commitment in Research”
 - “Public Health Funded Research & Cooperative Agreements”

❖ Consider your business needs

- Do you need to license university IP?
- Do you need to use university facilities?
- Do you need a business mentor?
- Do you need money?

Creating a commercial partner

Finding (and using) your resources

- ❖ NSF I-Corps (regional or national)
 - customer discovery, market validation & value proposition
 - gain insight into starting a business or industry requirements/challenges
- ❖ Campus + Community entrepreneurship programs
Small Business (Technology) Development Centers

YOU'VE MADE IT
THIS FAR...



TAKING THE LEAP

NOW LET'S
TAKE THE LEAP

PROGRAMS

launchCAMP

WEEKEND BOOTCAMPS

A free 12-hour business-building workshop offered throughout the year. LaunchCamp will teach you the basics.

TRIAD NAVIGATOR

An entrepreneur's guide to connection, support, and events in the Triad.

launchLAB 101

Ready to start? Our 101 series is 5 weeks providing the fundamentals of launching a business. Turn your idea into reality.

capitalCONNECTS

A signature event providing education opportunities for investors and connections to startups seeking capital.

launchLAB

14-week accelerator program for growth stage companies. Includes Mentors, Interns, Demo Day and Education Sessions. Application Required.

STRATEGY SCRUBS SESSION

Need specific advice? These one-on-one sessions help beginner and serial entrepreneurs alike.

FURLOUGHED

to Entrepreneur

Designed to test feasibility and viability of building your own business.

FIRST LAUNCH CAPITAL FUND

A seed-stage venture fund created to drive economic development and job creation to create a more robust start-up community.

Creating a commercial partner

Finding money (SBIR/STTR grants)

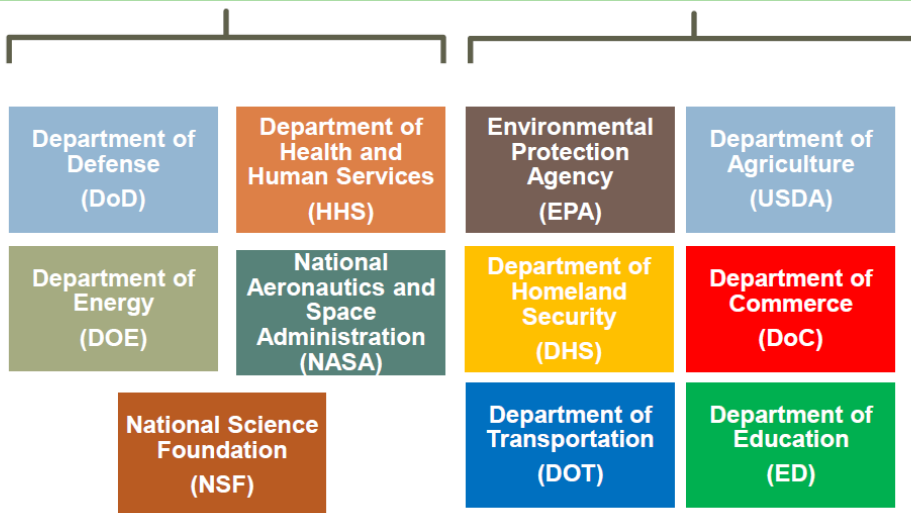
Small biz develop/commercialize innovative solutions to agency/public need with significant market potential

❖ Small biz is the awardee

- for-profit, 51% owned by individuals, under 500 employees
- 50% of awards go to biz of less than 10 people

SBIR & STTR

SBIR only



- ❖ Federal Agencies with R&D budgets > \$100M
- ❖ 1 in 9 SBIR funded companies attract equity financing

STTR/SBIR Funding

3 Phase program

Phase I

Concept Development
6 months

➤ \$150,000 - \$250,000

Award rate 15-20%

Phase II

Prototype Development
24 months

>\$1.0– \$1.5M

Award rate 35-40%

Phase III

Commercialization
No SBIR funding

*****TALK** to program officers– some agencies require it. ALL recommend it.

Creating a commercial partner

More on STTR

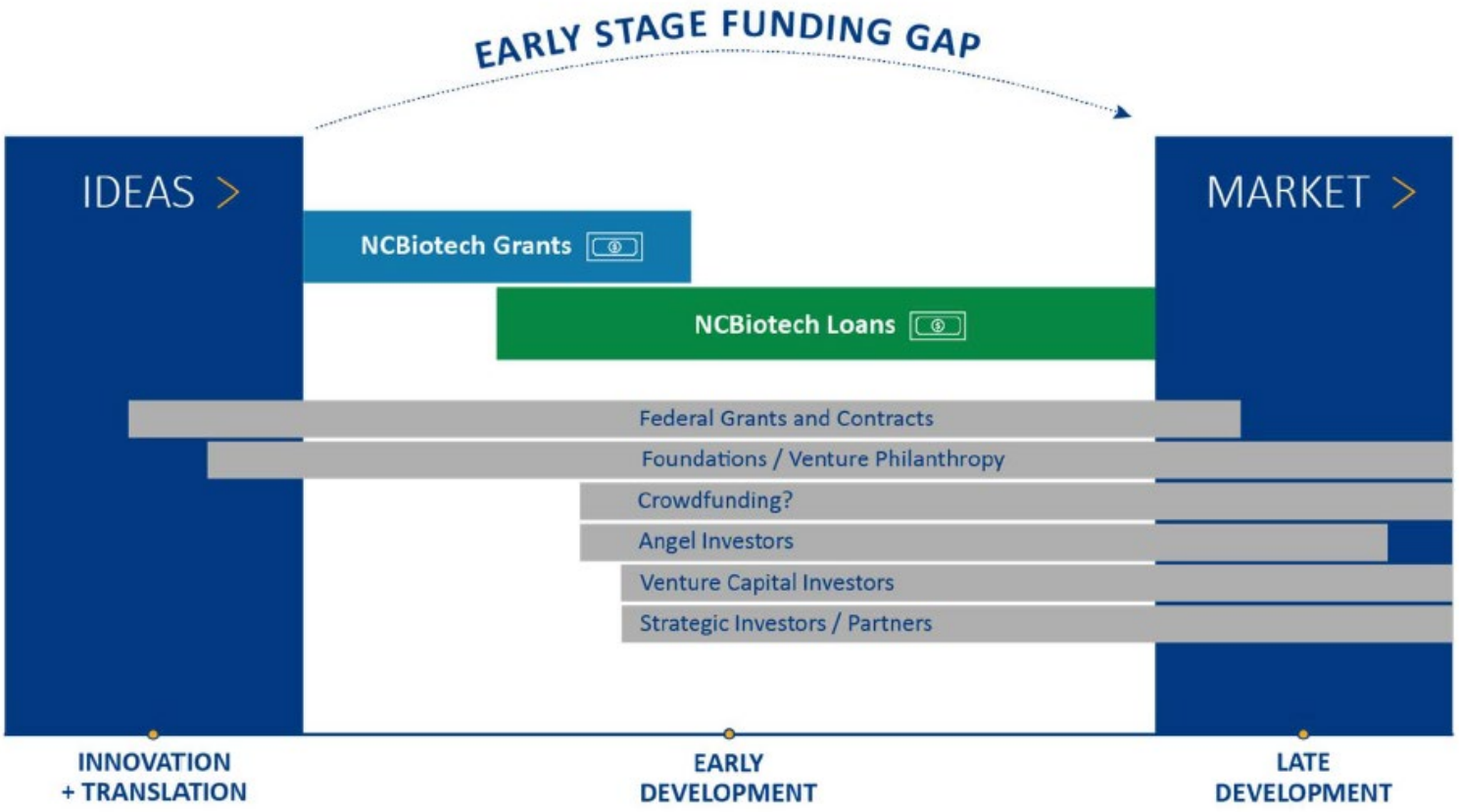
Facilitates cooperative R&D between small biz and research institutions

- ❖ University spin-out “friendly” mechanism
 - PI can be majority employed by University (but not 100%)
- ❖ Small business is the awardee
 - University = up to 60% of work; Small Biz = at least 40%

Creating a commercial partner

Look everywhere for funding

NC Biotechnology Center





INSPIRE



INFLUENCE



- **Questions**

- **How many times did it take getting it wrong to get it right?**
- **If I am a first time Inventor, where can I get help?**
- **Were you scared to share your ideas incase others might take them?**



Inspire

Inform

Influence

Invention

Innovation

Culture

The Inventor Mindset



you.