From Discovery to Impact

How Technology Transfer Works in Academia

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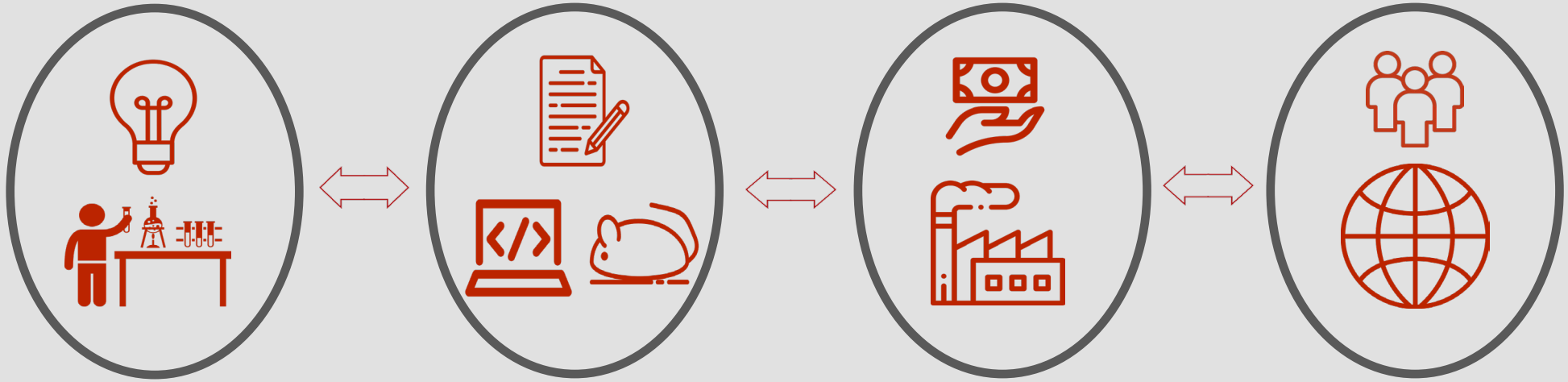
What is Technology Transfer?

The transfer of intellectual property (IP) between two or more organizations.

The tech transfer process should be viewed as an extension of the academic mission by broadly disseminating research in a practical manner.



Conception of ideas / core research

IP assets creation/ patents and others

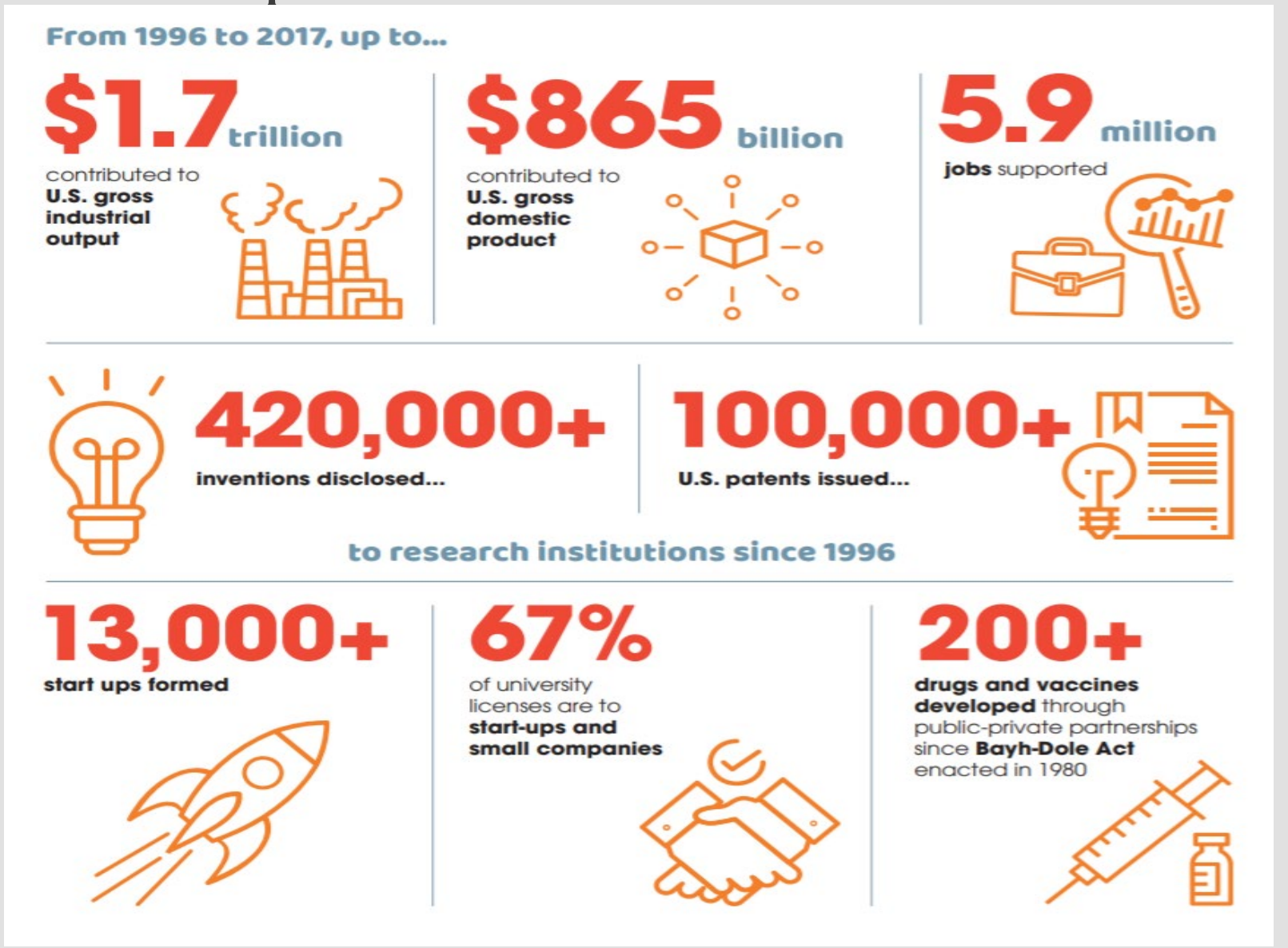
Further refinement/ validation/funding

Product approval/ market entry

Bayh-Dole Act

- Directed under the Bayh-Dole Act of 1980
  - Prior to Bayh-Dole only 5% of university inventions were licensed to commercial partners
  - Post-Bayh-Dole, universities:
    - Take ownership to inventions from federally funded projects and where significant university resources were used
    - Must revenue share with inventors
    - Must report inventions and attempts to commercialize inventions to the government

Tech Transfer Impact

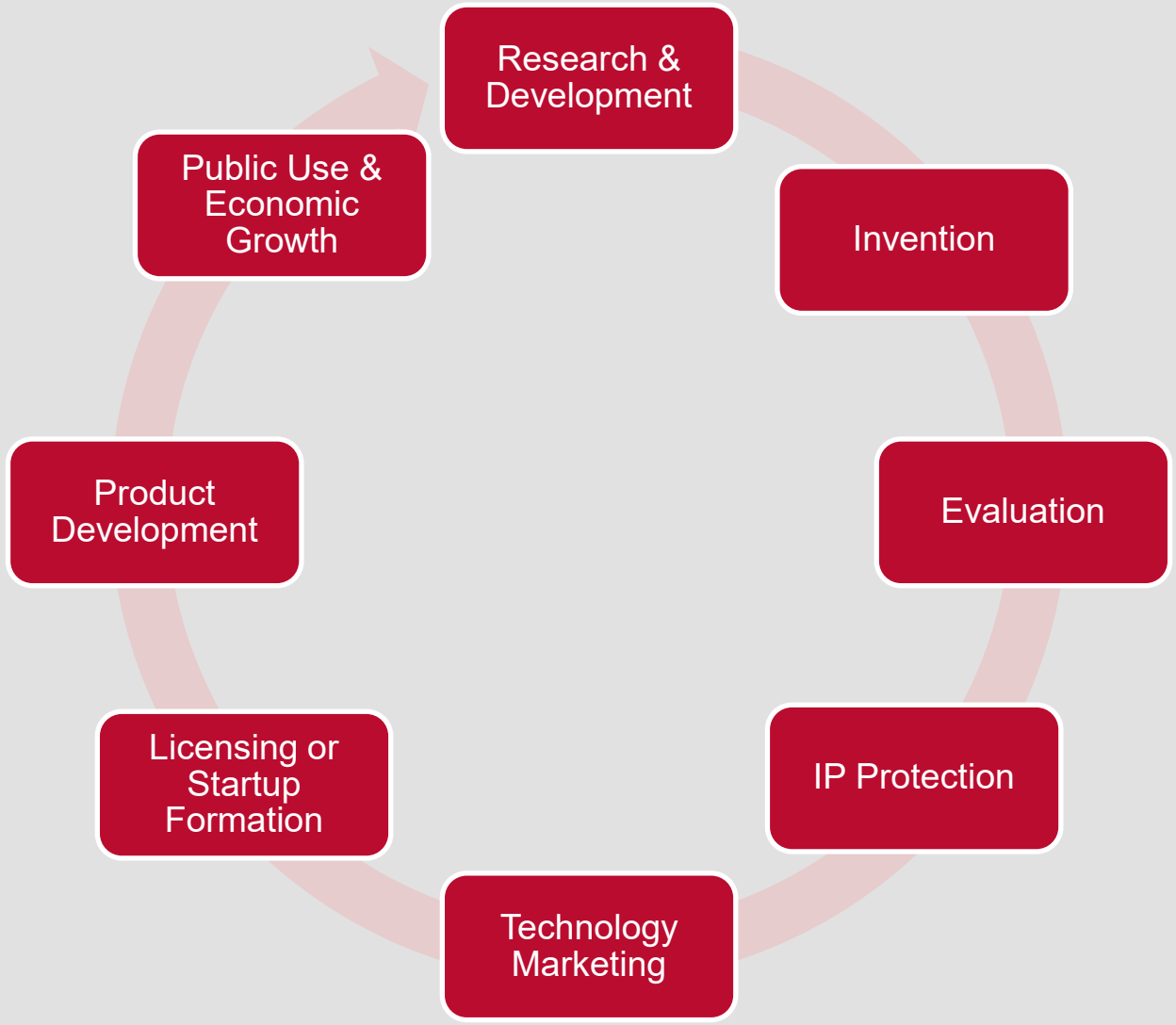


Benefits of Technology Transfer

Real and tangible products

- **Gatorade (Univ Florida)**
- **Google (Stanford)**
- **Cochlear Implants (UCSF)**
- **Remicade (NYU)**
- **Lyrica (Northwestern)**
- **PrecivityAD (WashU)**
- **Taxol (NCI – Florida State)**

Technology Transfer Life Cycle



What Counts as an Invention in Academia

- THERAPEUTICS, DIAGNOSTICS, DEVICES, DIGITAL HEALTH TOOLS
- RESEARCH TOOLS, PLATFORMS, AND SOFTWARE
- REQUIRES NOVELTY, UTILITY, AND ENABLEMENT
- IDEAS ALONE ARE NOT INVENTIONS

Who Counts as an Inventor in Academia

- INVENTORSHIP IS NOT THE SAME AS AUTHORSHIP
- BASED ON CONTRIBUTION TO THE CLAIMED INVENTION
- NOT DETERMINED BY SENIORITY, FUNDING, OR LAB LEADERSHIP
- LEGAL DETERMINATION BY PATENT COUNSEL

Technology Assessment

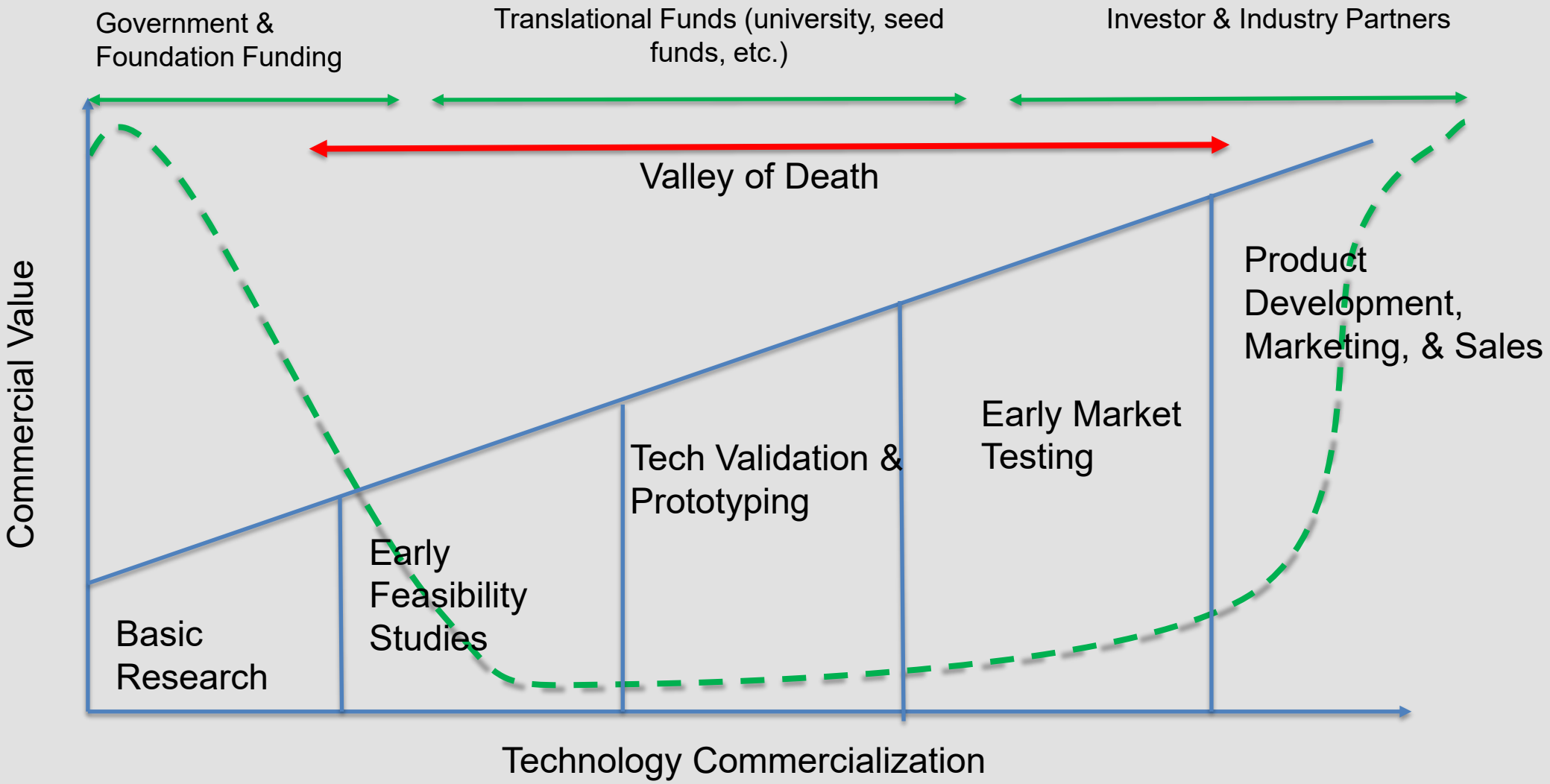
Patentability

- Have you Published it?
- What is it? (Composition, method, device, software)
- Cursory Search (GooglePatents, USPTO, SciFinder, Google, etc.)
- In House Patent Agents or External Patent Counsel
- What claims are available?

Commercial Potential

- Problem (What is the unmet need?)
- How is it done today? (Competitive Landscape)
- What is new? (Is it Protectable?)
- Who cares? (Value Proposition)
- What are the risks? (How to mitigate?)
- How much will it cost? (Patents, Development)
- How long will it take? (Timeline)
- What is the exit success? (Startup/Outlicense?)

Creating Value



Invention Disclosure: The Starting Point

Submit before public disclosure (papers, abstracts, talks)

Creates optionality—no obligation to commercialize

Allows assessment of intellectual property (IP) and market potential

Starts collaboration with the tech transfer office

Forms of IP Protection

Copyrights

- Protect original "Works of Authorship"
- Automatically vested on the creator if the work is tangible
- Lasts 70 years from death
- Work for hire agreements are critical

Patents

- Protects new, useful, and "non-obvious" materials and processes, designs, plans
- Must apply via United States Patent and Trademark Office
- Granted for 20 years from filing

Trademarks

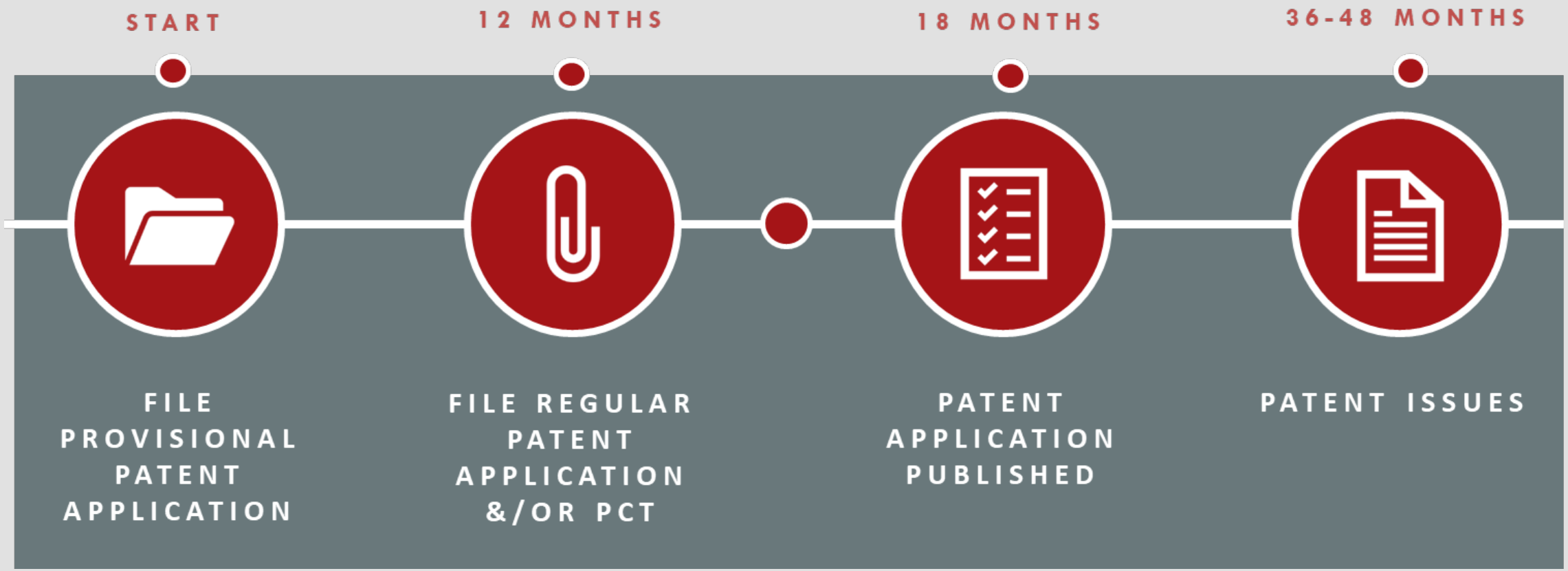
- Words or symbols used to describe a certain product or service
- Must apply via United States Patent and Trademark Office
- Granted for 10 years, but renewable forever as long as it is used in commerce

Trade Secrets – not retained by universities

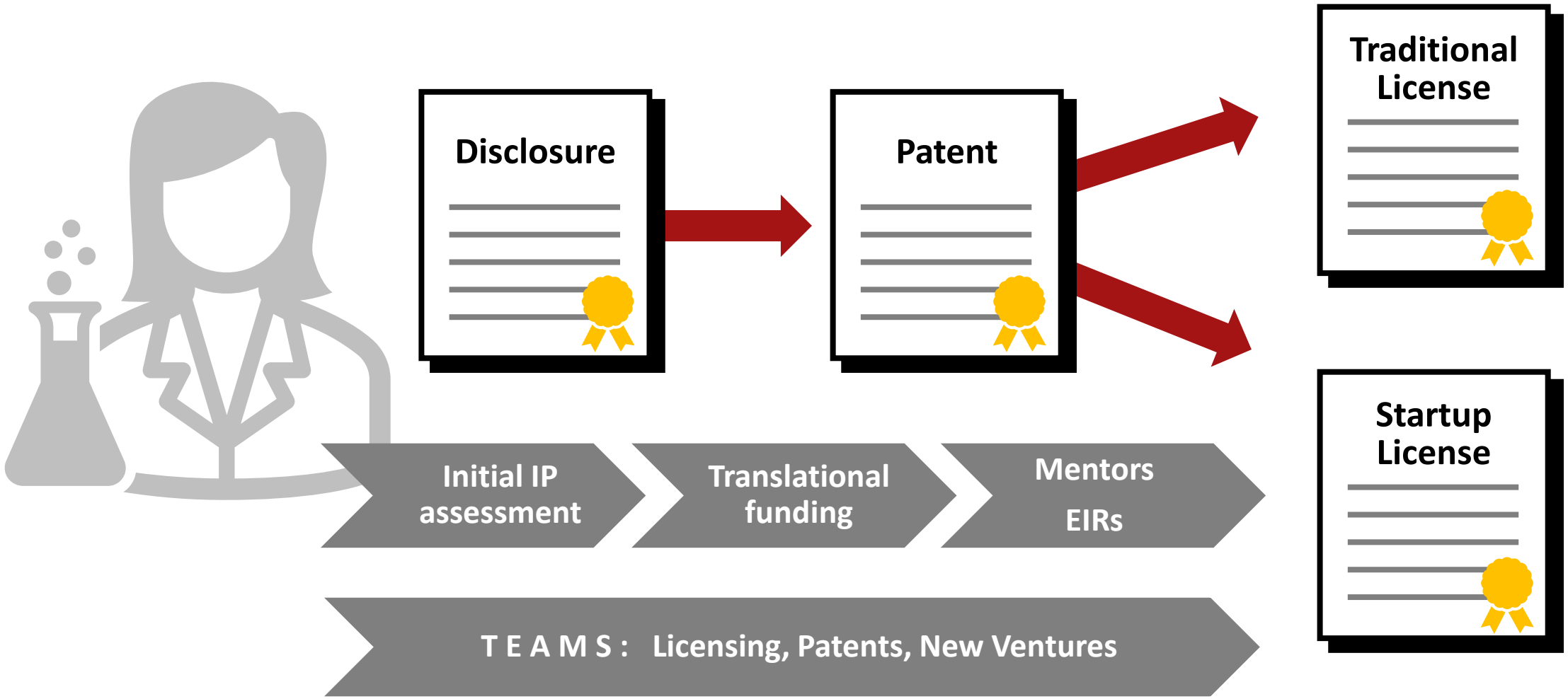
What can be patented?

- Legally, a **utility patent** may cover “any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof.” A **design patent** may cover “any new, original, and ornamental design for an article of manufacture,” and a **plant patent** may cover a “distinct and new variety of plant, including cultivated sports, mutants, hybrids, and newly found seedlings, other than a tuber-propagated plant or a plant found in an uncultivated state,” invented or discovered and asexually reproduced.
- See https://www.uspto.gov/patents/basics/essentials for more basic info on patent essentials

Patent Prosecution Timeline



Paths towards commercialization and support teams along the way



What your tech transfer office should do for you

- Produces marketing materials
  - One-pager, non-confidential writeup of technology and value proposition/market application
  - One slide
  - Short slide deck
  - Investor slide deck
- Finds the companies & investors in the space and the key contact
  - In collaboration with the inventors if they want to suggest companies and/or contacts
- Produces “email campaigns” to elevate your technology to the best audiences
  - Structured outreach
  - Recorded feedback
- Attends partnering meetings
  - 1:1 conversations with specific companies or investors
  - Usually covering several technologies at once
  - Often follow-up on the technologies of interest

How to Engage with Your Tech Transfer Office

REACH OUT EARLY—EVEN BEFORE DISCLOSURE

SHARE PUBLICATION TIMELINES AND FUNDING CONTEXT

ASK FOR GUIDANCE ON PATENTS, STARTUPS, AND LICENSING

VIEW YOUR TTO AS A STRATEGIC AND COLLABORATIVE PARTNER

Questions?

WashU

Early-Stage Funding Landscape

- Pre-seed: institutional funds, philanthropy, translational grants
- Seed: angel investors and early venture funds
- Non-dilutive funding: SBIR/STTR, philanthropic, friends/family
- Venture capital typically comes later after value inflection point

Glossary: Core Tech Transfer Terms

Invention: A novel and useful solution sufficiently developed to be protected and commercialized

Invention Disclosure: A confidential submission describing an invention for evaluation

Intellectual Property (IP): Legal rights that protect inventions, such as patents and copyrights

Inventorship: A legal determination of who contributed to the patent claims

Prior Art: Public information that may affect patentability

Bayh–Dole Act: U.S. law allowing universities to own inventions from federally funded research

Glossary: Patents & Protection

Provisional Patent: Initial filing that establishes priority and allows 12 months of development

Non-Provisional Patent: Formal patent application examined by the patent office

Patent Claims: Legal definition of what a patent protects

Freedom to Operate: Assessment of infringement risk

Trade Secret: Confidential know-how protected by secrecy

Glossary: Commercialization & Funding

License: Agreement allowing a company to use university IP

Royalty: Revenue share paid to the university from product sales

Startup: A new company formed to commercialize technology

Pre-Seed Funding: Early capital to generate proof-of-concept data

Seed Funding: Funding to build initial product and team

Venture Capital: Professional investors funding high-growth companies

Non-Dilutive Funding: Funding that does not require giving up equity