

TECHNOLOGY COMMERCIALIZATION

Tech Transfer at the U

BMEN 3151 Med Device Practicum | Nov. 9, 2022

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Tech Portfolio Manager, Technology Commercialization



UNIVERSITY OF MINNESOTA
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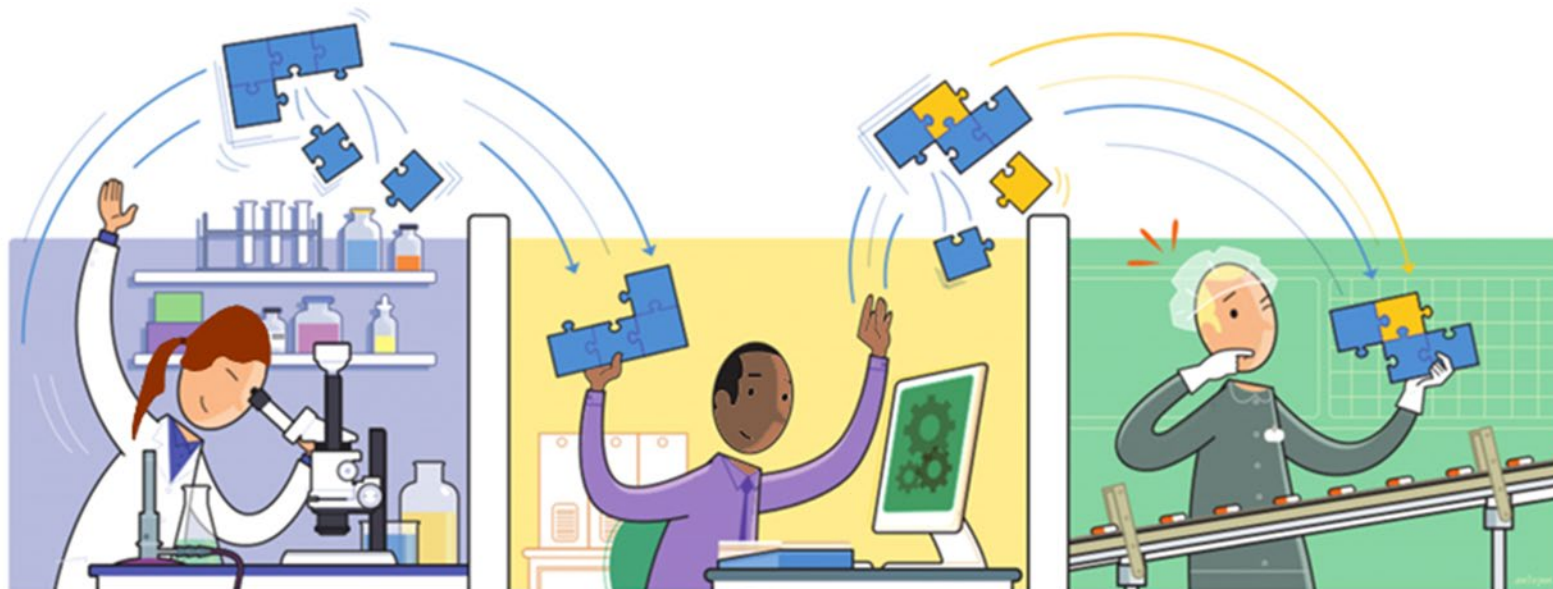
Technology Commercialization (the office formerly known as “OTC”)



WHAT is “Technology Commercialization”?

Tech transfer or technology commercialization is:

The process by which valuable research, skills, knowledge, and/or technology is delivered from **research institutions** into the **corporate environment** where it can be nurtured and developed into a commercial product or service with wider application and distribution.



WHY commercialize technology?

OUR MISSION

We facilitate the transfer of University research to develop new products and services that:

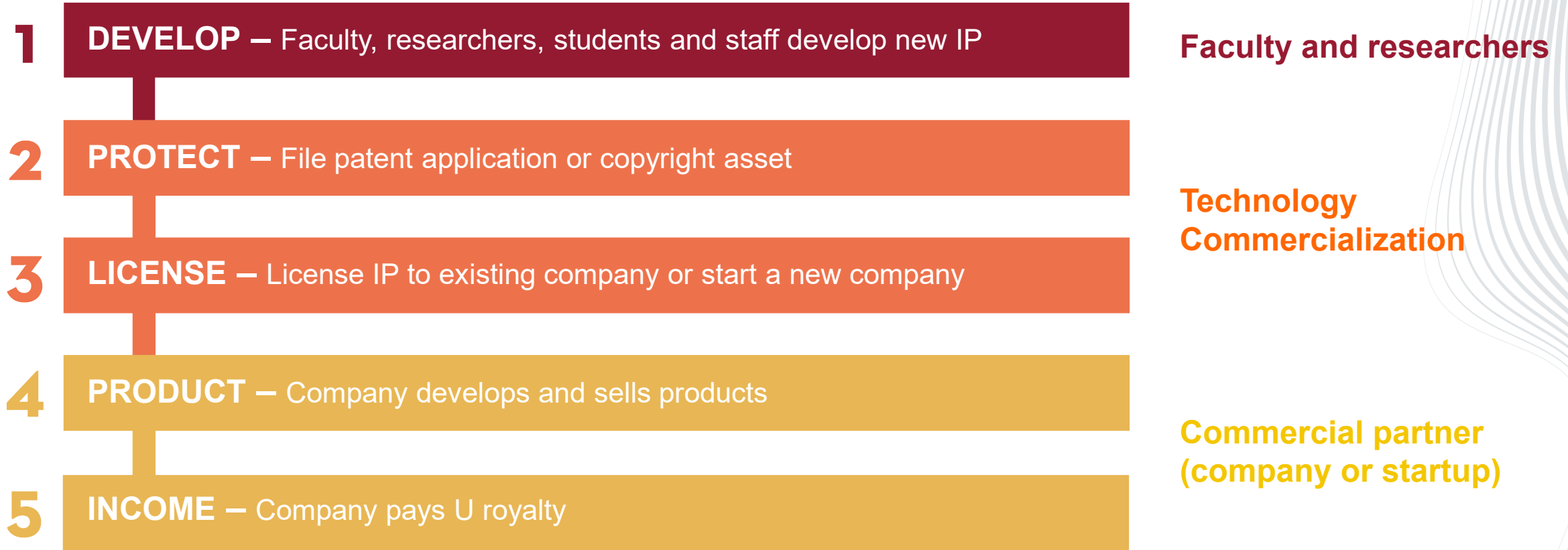
- Benefit the public good
- Foster economic growth
- Generate revenue to support the University's mission



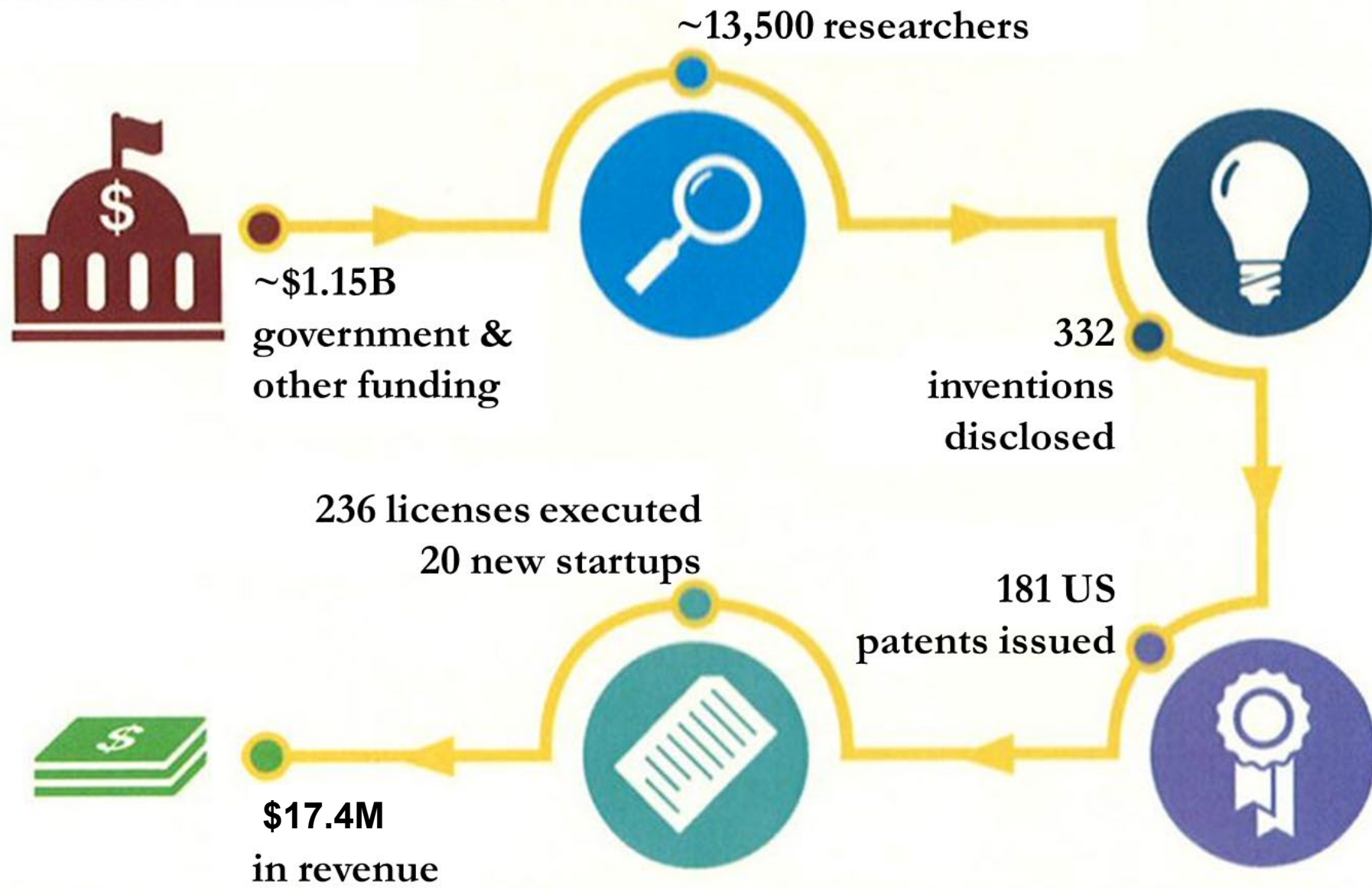
IP Ownership at the U

- **Regents Policy** states that the U is the sole owner of all IP rights in technology:
 - Created by **University employees** in the **course of their employment**, or
 - Created by individuals using **substantial University resources**
- Carve-out for student-created technology in fulfillment of a University course requirement
 - Students typically own IP developed during a **course-for-credit** or **outside of University activities**
- Each situation is unique and Tech Comm can help with any questions

Commercialization Process



FISCAL YEAR 2021



Tech Transfer Statistics

	2017	2018	2019	2020	2021
LICENSES & REVENUE					
New Licenses	213	230	223	235	236
Current Revenue Generating Agreements	545	575	571	601	575
Gross Revenue	\$22.6	\$16.1	\$20.7	\$14.1	\$17.4
STARTUPS					
Startup Companies Formed	18	13	19	19	20
INVENTIONS & PATENTS					
Invention Disclosures	406	400	391	397	332
New Patent Filing Rate*	57%	45%	42%	38%	38%
Issued Patents (US and Foreign)	147	186	187	182	181
MN-IP					
MN-IP Research Agreements	72	86	103	73	60
Companies w/ MN-IP Research Agreements	51	58	77	69	51
Sponsored Research Commitments	\$20.9	\$21.3	\$22.5	\$27.9	\$15.3



What We Do:

- **Identify** new inventions
- **Evaluate** commercial potential and protectability
- **Protect** the intellectual property
- **Identify and license** IP to companies who can commercialize the technology via a product or service
- Or alternatively, **facilitate the creation of a start-up company** (with incubator support)

Roles

Technology Portfolio Managers (TPMs)

- “Internally” focused
- Work with researchers to identify, evaluate and protect IP



Technology Licensing Officers (TLOs)

- “Externally” focused
- Work with researchers and companies to commercialize IP

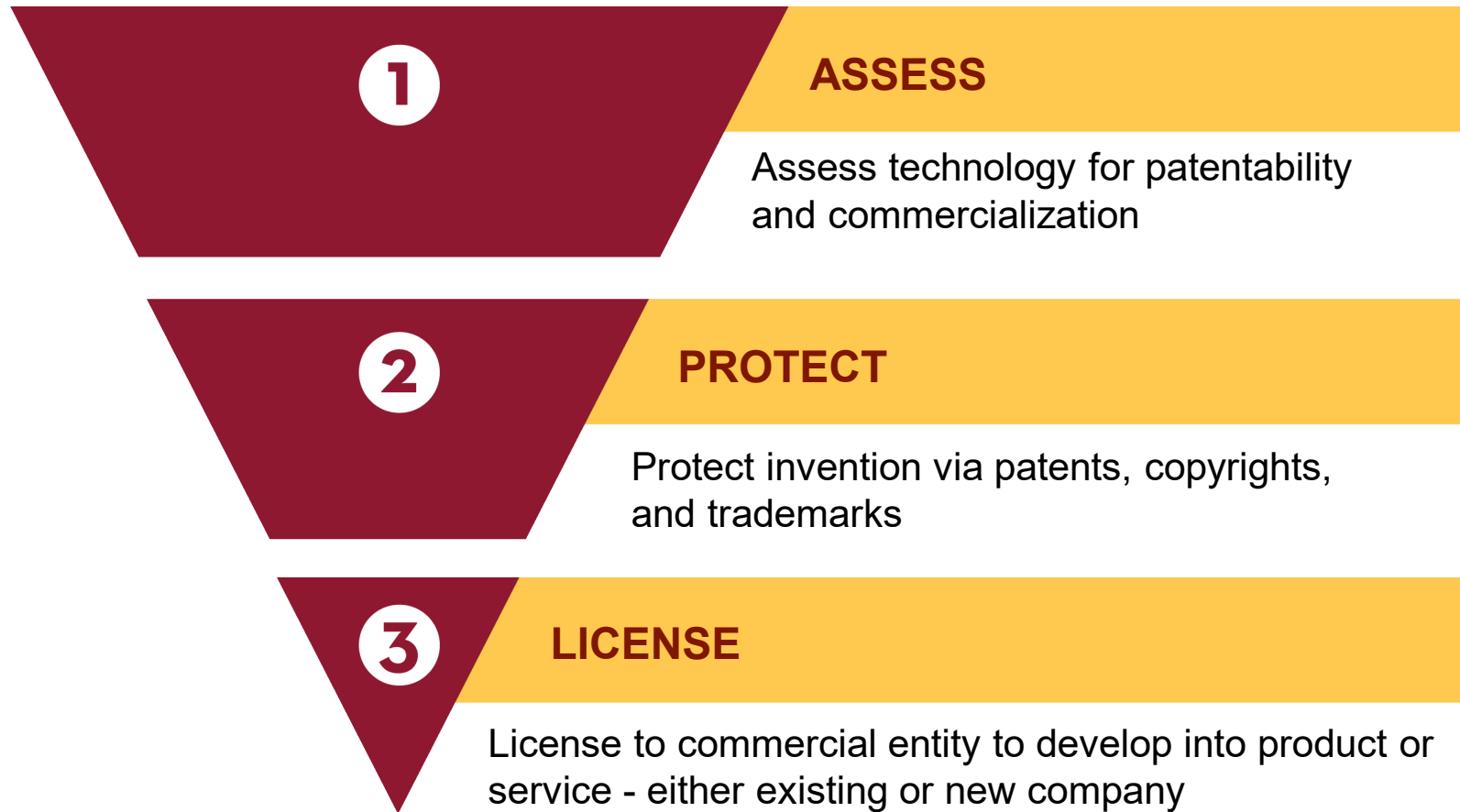


Venture Center

- Work with researchers and companies to create fundable startups

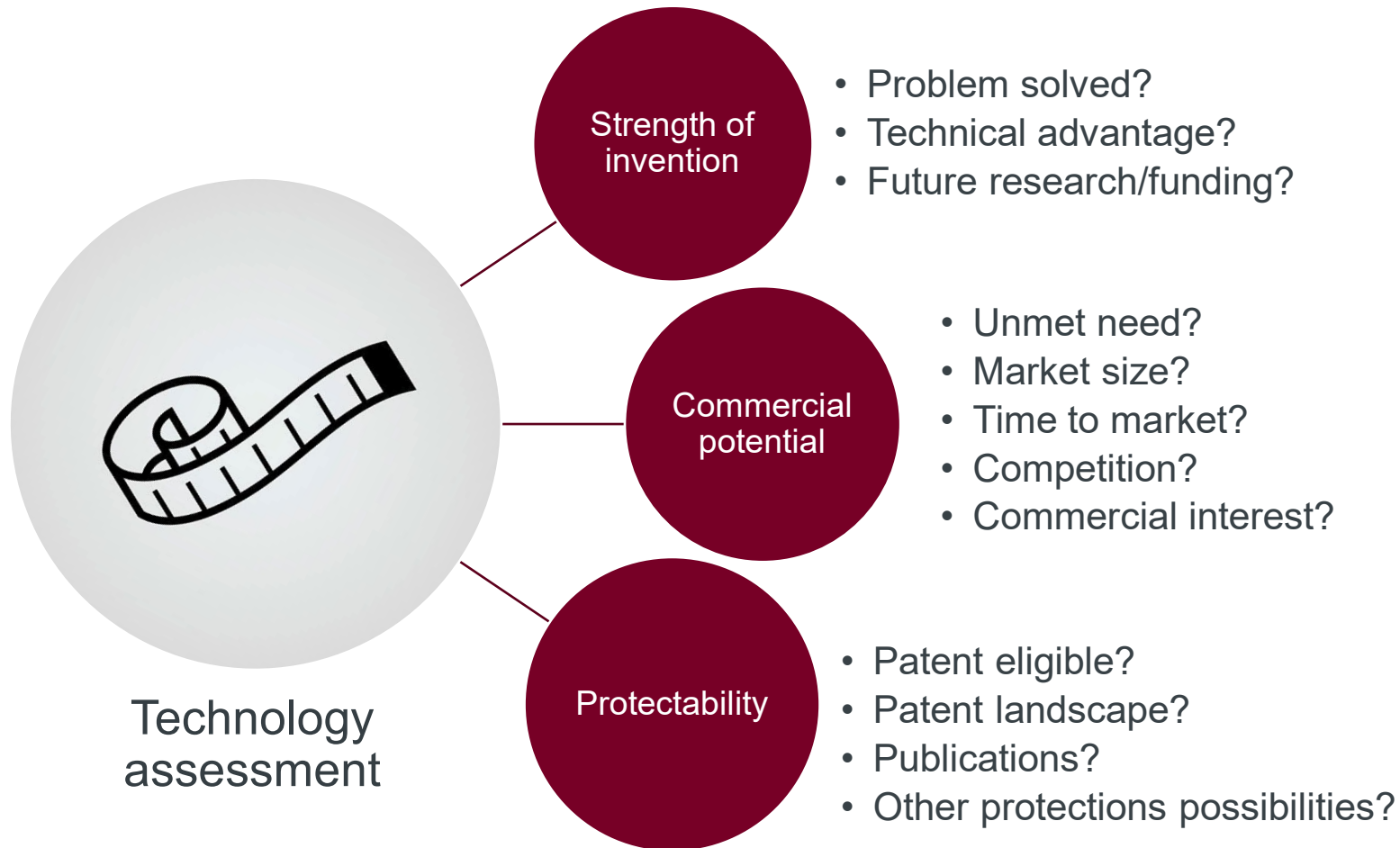
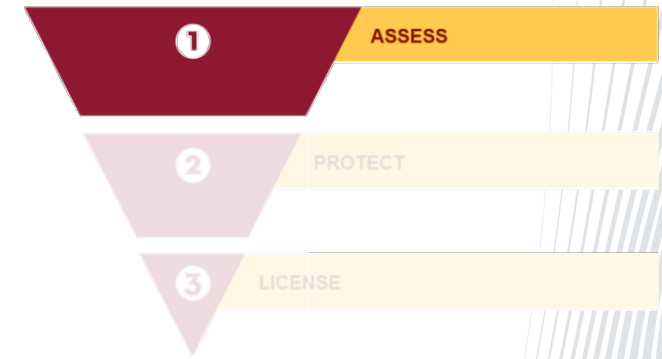


Tech Commercialization – Core Activities

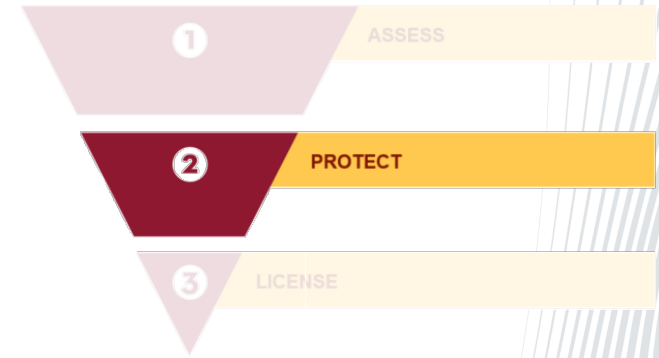


Technology assessment

Evaluating technology for commercial applications is different than evaluating a technology for a grant or publication.



Technology protection



TECHNOLOGY COMMERCIALIZATION

Inventions
Designs
Plants

Patent



Trademark



Brands
Trade names
Trade Dress

Photographs
Software
Databases



Copyright



Trade Secret

Secret inventions
Secret formulations
Secret Methods



Patent Filing Philosophy & Strategies

- Preserve options and minimize costs (*aka “Why do today what I can put off until **tomorrow**”*) with
 - Provisional applications (12 mos.)
 - PCT and regional office applications (30 mos.)
- **Robust specification** to support multiple claiming strategies
- Patents are a primary **marketing tool** – clarity in claims and written description are important for licensing and enforcement
- Probe researchers for **commercially relevant** embodiments and/or minimum viable product (MVP)

Provisional Patent Applications

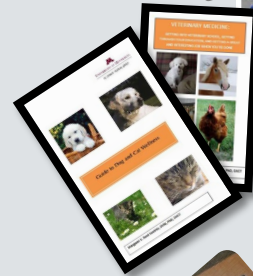
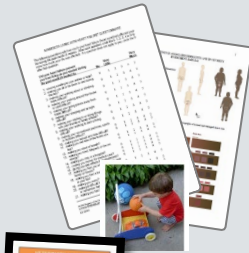
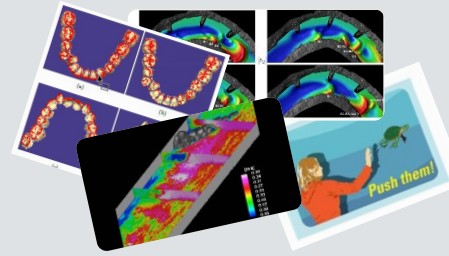
- Primarily used for first filings
 - Reduces initial investment
 - **Imminent bar dates**
 - Low TRL inventions
 - Buys time for reduction to practice, generation of data, development of claiming strategy, etc.
- Risk – ‘cover sheet’ provisionals can provide a false sense of security
- Can re-file provisional in some situations

Non-provisional Patent Applications

- Strategy commensurate with market opportunity and industry requirements
 - Pharma vs. high tech
 - Exclusivity or **FTO** for licensee?
 - Licensee need for foreign protection
- Other considerations
 - US often largest market and a favorable forum for **damages**
 - Cost of foreign filings vs. value of robust US strategy/open continuations

Non-patented “Creative Works”

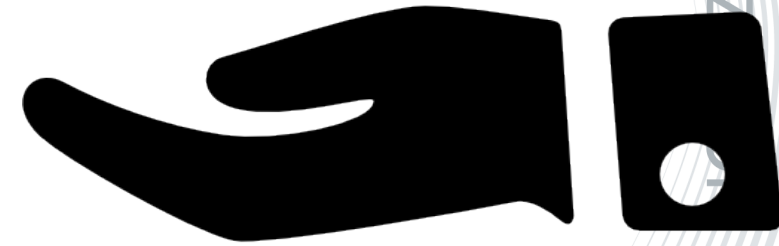
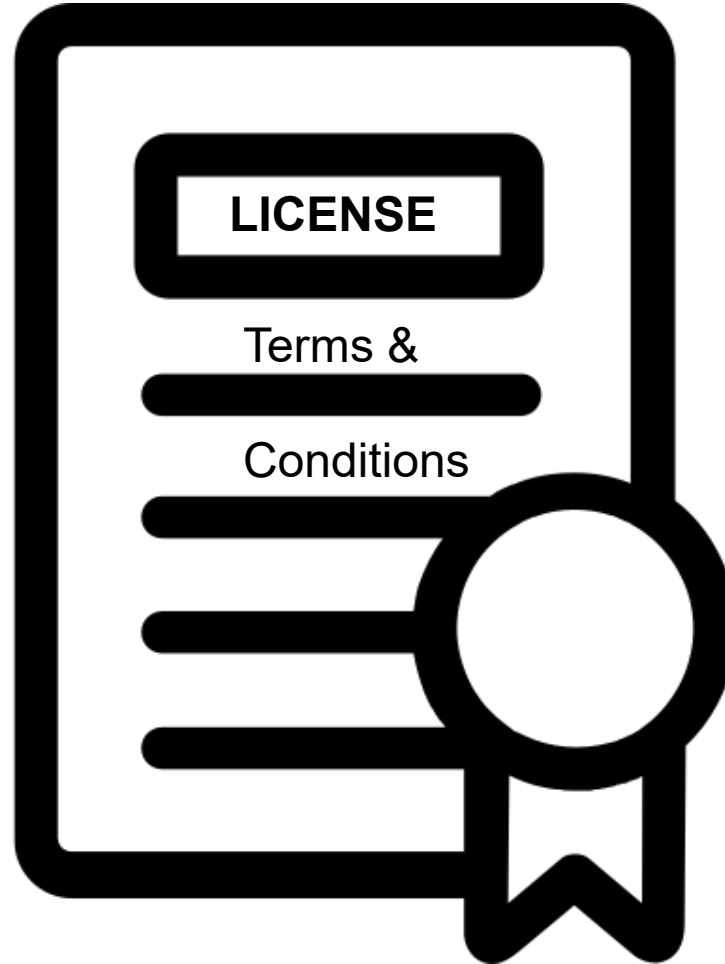
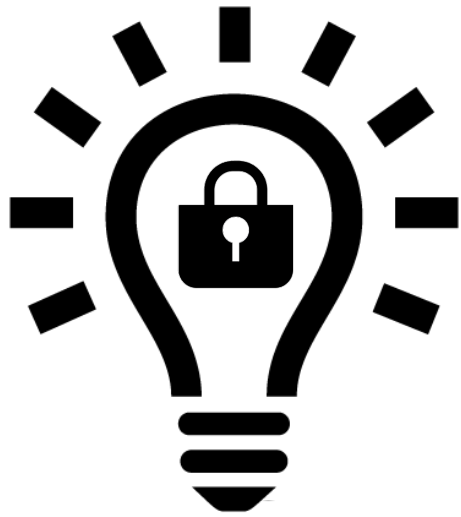
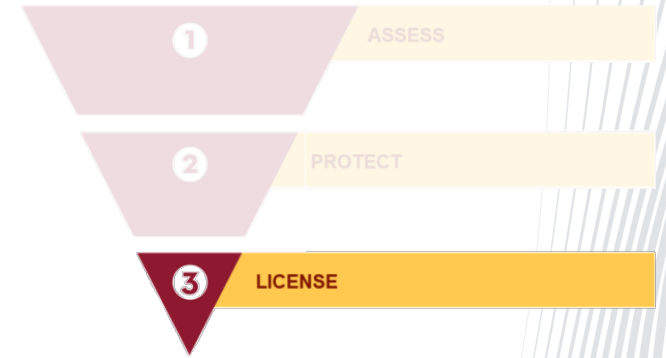
- Software
- Mobile apps
- Web applications
- Databases
- Questionnaires
- Curricula
- eBooks
- Simulations
- Images
- Designs



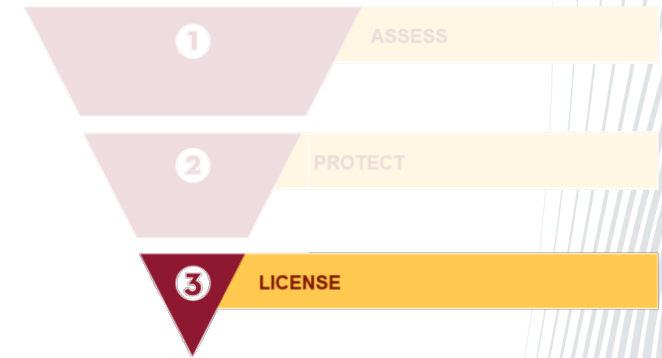
- DVDs
- Videos
- Websites
- Presentations
- Toys
- Apparel



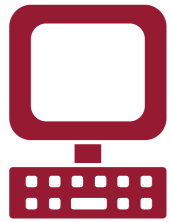
Technology licensing



Technology licensing

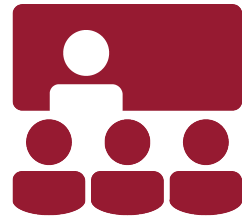


Some marketing approaches to identify licensees:



**Licensing
Website**

License.umn.edu



**Industry
Technical
Conference**



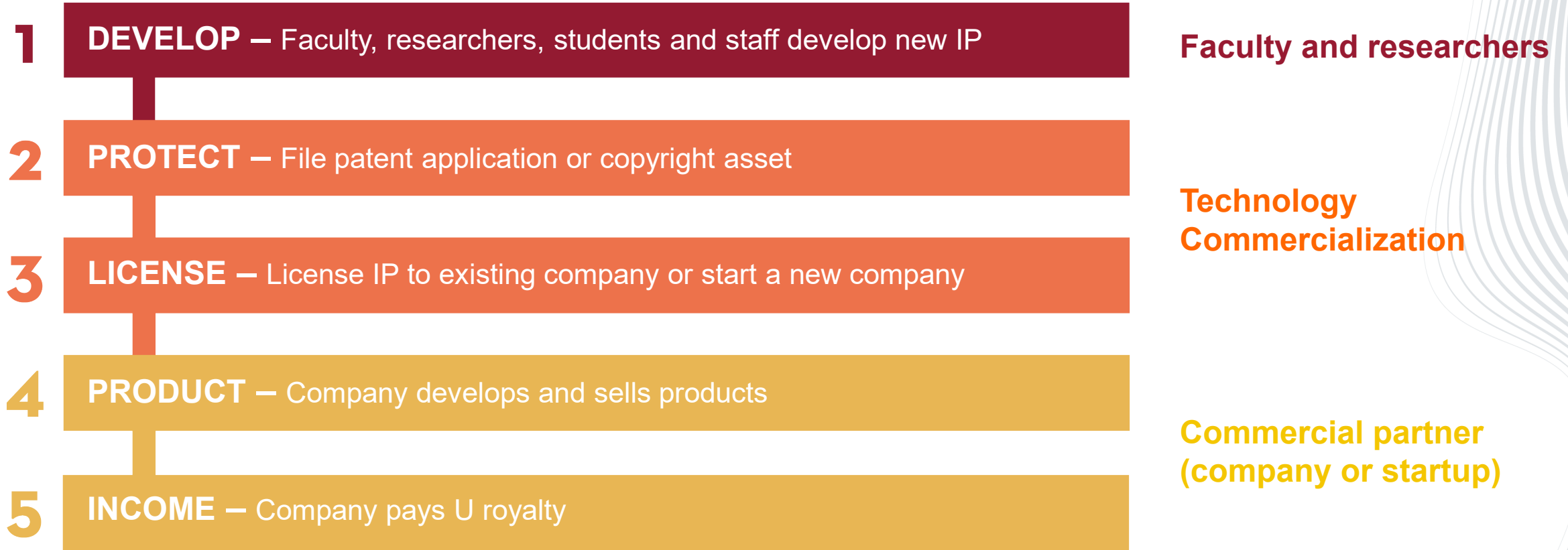
**Marketing
Campaigns**



**1:1 Company
Outreach**



Commercialization Process



Step by Step

1 RESEARCH

Ideas | Experiments | Observations
Records | Lab Notebooks

2 PRE-DISCLOSURE

Contact a technology portfolio manager before making your discovery public to discuss your idea and our process.

3 INTELLECTUAL PROPERTY (IP) DISCLOSURE

Send us your completed IP Disclosure Form to document your IP and initiate the evaluation.

4 EVALUATION

We review the IP Disclosure Form with you to discuss technology transfer options, conduct patent searches, and analyze the market to determine commercial potential.

5 PROTECTION DECISION

We select the best protection strategy for technologies likely to provide a suitable return to the University. This is generally reached in three months.

6 PROTECTION

We file the patent application or trademark with the US Patent Office and/or foreign patent offices. Some IP may only be protected through copyright.

7 MARKETING

We identify the best route to commercialization to maximize impact, most commonly through licensing or creating a startup.

8 LICENSING

We negotiate the terms of the license agreement, which require the licensee to bring the technology to the marketplace.

9 COMMERCIALIZATION

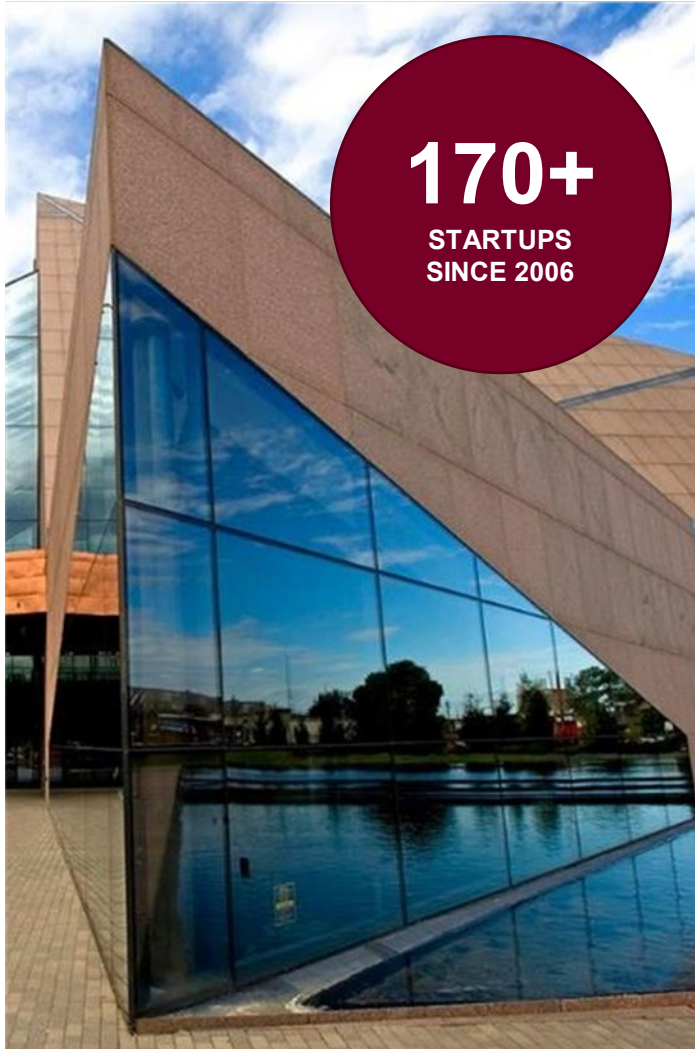
The licensee turns the technology into a product or service. This usually requires additional development and sales investment.

10 REVENUE

Revenues received from the licensee are distributed to the inventors, college or school, department or center, and the University.



Venture Center: Startup Support

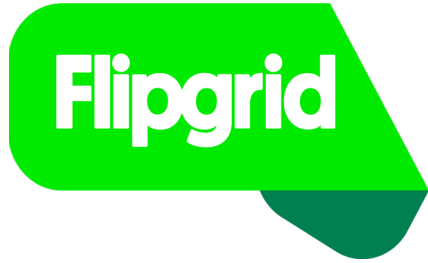


At the Venture Center, we take ideas and technology that stem from University of Minnesota research, prepare them for the market, and launch new businesses around them.

What We Do:

- Assess the commercial potential of ideas, identify funding opportunities and establish new companies based on UMN inventions
- Run the Discovery Launchpad
- Work with external entrepreneurs, business advisors, and potential investors to find additional resources and support
- Manage Discovery Capital investment program

Notable Recent Startups



Acquired by Microsoft



Went public on NASDAQ



Acquired by Bio Techne



Acquired by Illuminate Education

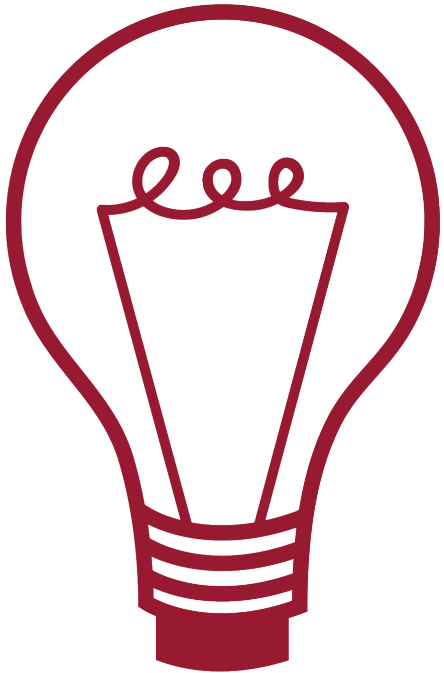


CoreBiome

Acquired by Orashure



Business Advisory Group




The Business Advisory Group is a broad-based network of entrepreneurs and business executives who help vet new ideas and assist with technology commercialization across a wide range of technological disciplines and sectors.

Members of the Business Advisory Group:

- Participate in bimonthly meetings
- Help find entrepreneurs, investors, and CEOs
- Make connections with other key stakeholders and industry experts
- Provide technical and market advice
- Serve as advisors, mentors, and investors
- Correspond outside of regularly scheduled meetings
- Sign a nondisclosure agreement

Intellectual Property Disclosure Form


 UNIVERSITY OF MINNESOTA

OTC staff use only
 Case Number:

INTELLECTUAL PROPERTY DISCLOSURE FORM
 CONFIDENTIAL – UNIVERSITY OF MINNESOTA OTC USE ONLY
 Time-Sensitive Material, Please Expedite

All documents submitted to the Office for Technology Commercialization (OTC) are treated as confidential, including technical and personal information submitted within this Intellectual Property Disclosure Form.

This form should be used for reporting:

- Inventions that can be protected under patent laws, including: Compositions; Methods and processes; Machines, medical devices; Algorithms; Plants; and;
- "Works of Authorship": that can be protected under copyright laws, including: Software, Applications ("Apps"); Testing materials; Analytical profiles; Designs; and Architectural plans.

The questions in this form are designed to assist you in the disclosure process. Please fill out every section as completely as possible as it pertains to the intellectual property you are disclosing.

If you require more space for your disclosure, attach additional disclosure materials as needed to this document or send as attachments in the e-mail message you send with this document.

You may also contact the Technology Strategy Manager for your unit to answer questions regarding intellectual property or the completion of this form.

Send the completed form and all attachments via e-mail to the Office for Technology Commercialization at umotc@umn.edu.

Start here:

1. **Intellectual Property Title.**
 - 1.1 Intellectual Property Title – Title must be short, simple and non-confidential.

Form: OGC-SC412
 Form Date: 05.22.02
 Revision Date: 05.21.15

1 of 7

- Background - describe the work of others that has failed to solve the problem
- Summary - describe the invention broadly and then again with more specificity; include figures, drawings, graphs
- Description - provide experimental or other details to show how to make and use the invention
- Commercial applications
- Funding sources (e.g. funded by Boston Scientific)
- Potential third-party rights
- Public disclosures
- Contributors (inventors)
- References
- Contacts

Questions?



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