

Office of Technology Transfer and Innovation

Division of Energy and Innovation



Leadership



Mike Harold

AVP – Intellectual Property
and Industrial Engagement



Ramanan Krishnamoorti

VP – Division of Energy
and Innovation



Haleh Ardebili

AVP – Entrepreneurship
and Startup Ecosystem



Mike Harold

AVP – Intellectual Property and
Industrial Engagement

Intellectual Property

Facilitate generation
of IP and provide
effective stewardship
of the UH IP portfolio

Licensing

Evaluate and market
IP, execute licenses
and IP portions of
research agreements



Haleh Ardebili

AVP – Entrepreneurship &
Startup Ecosystem

Start-Ups & Tech Bridge

Promote collaborations
with industry partners &
startups

Entrepreneurship

Build a culture of
entrepreneurship
and innovation
across campus





OTTI: Mission and Activities

Foster research and scholarship through a culture of entrepreneurship and effective transfer & commercialization of UH technology

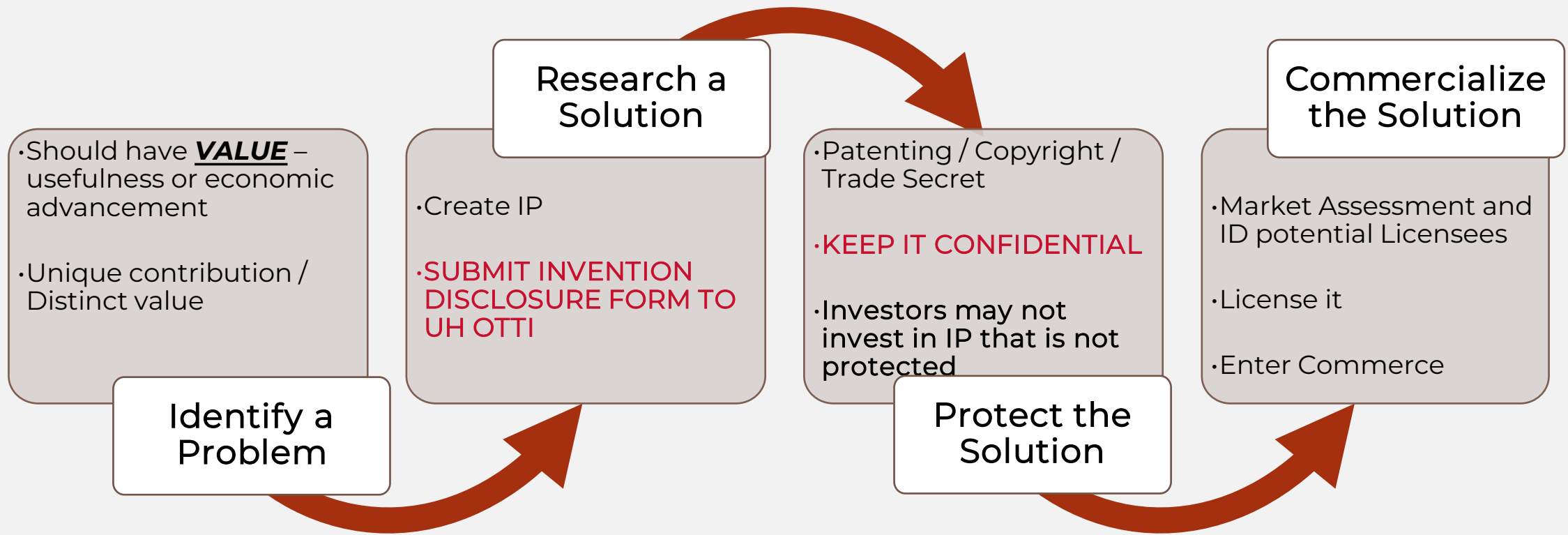


Benefits of Research, Innovation and Entrepreneurship

- + Research
 - + enables faculty to advance science and engineering
 - + provides direct (to fund research) and **indirect costs** (to pay for research infrastructure)
- + **Entrepreneurship** enables UH researchers to impact society through commercialization of their technology, such as **startup companies**
- + **Innovation** may lead to inventions and patents; **licenses to UH IP** generates **royalty income** for the University and Inventor



The process



Why startups?

- + Venture created with an idea developed using UH IP, UH resources (UH Lab, faculty staff or student working at UH on same subject area, UH funding and UH equipment)
- + Steps to create a startup at UH
- + Securing IP License is NOT the first step
- + Communicate your interest with the Startup Development team; they will coach you!
- + Conflicts of interest can be managed
- + Contact us for any questions...

Tech entrepreneurship at UH





MEET THE ASSOCIATE DIRECTOR

Tanu Chatterji

Associate Director of Startup Development, UH OTTI

Tanu is the founder of Innov8Hub- Startup accelerator designed to facilitate technology transfer of University IP and access SBIR/STTR funding and stimulate technology entrepreneurship by training academic innovators. She oversees operations of the UH Technology Bridge incubator and develops programming to support startup development activities. Tanu earned a MSc. in Pharmaceutical Sciences from Idaho State University and a Ph.D. in Cancer Biology from UT MD Anderson Cancer Center.



Incubator

Facilitates the development of high-potential startup ideas and offers resources such as physical space over a span of one to five years.

Accelerator

Intensive and compressed programs that provide mentorship, education and resources for early- or mid-stage startup founder.

“Whereas incubators provide the environments and resources to help your ideas succeed, accelerators compress years’ worth of learning and growth into the span of a few months.”

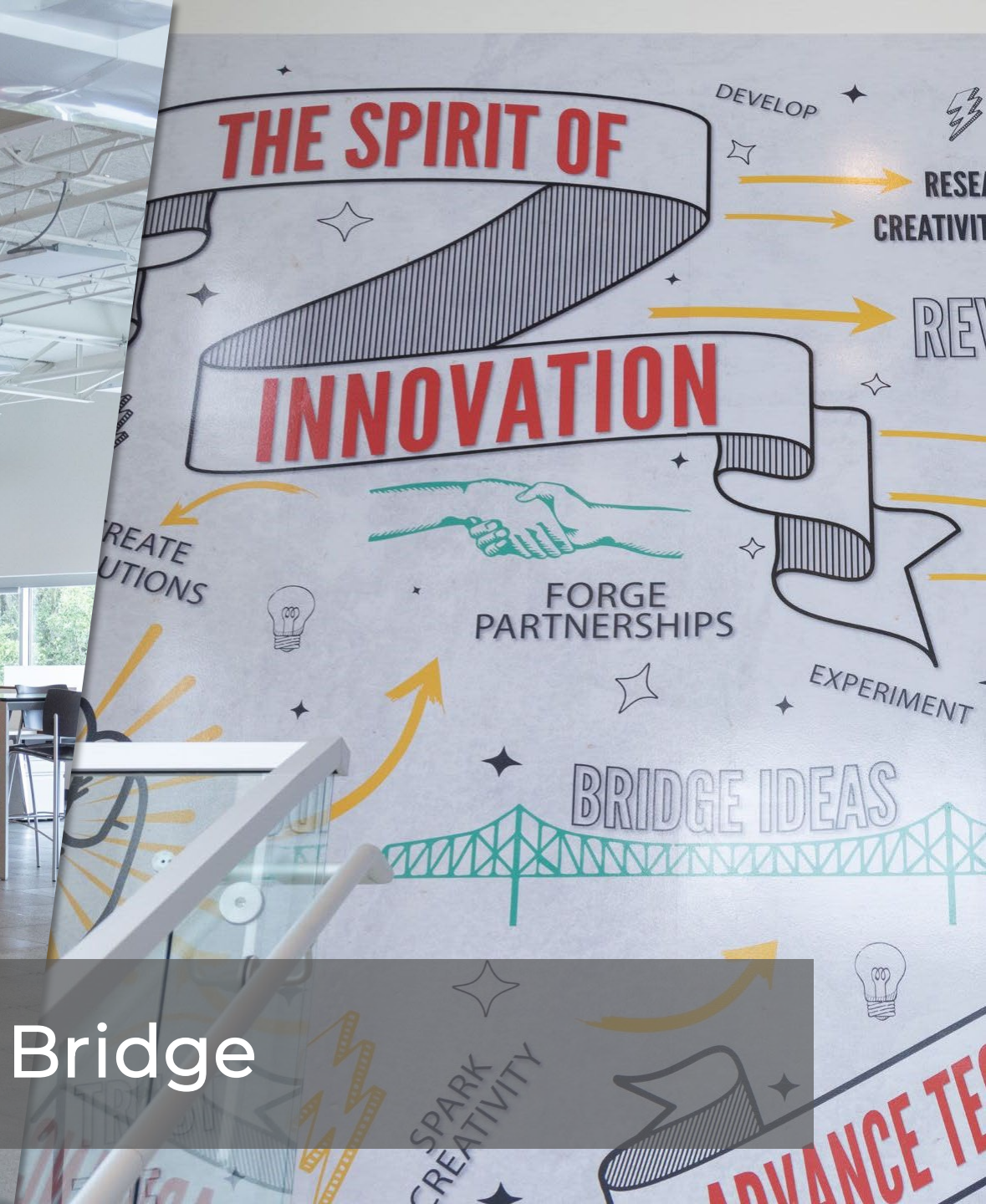
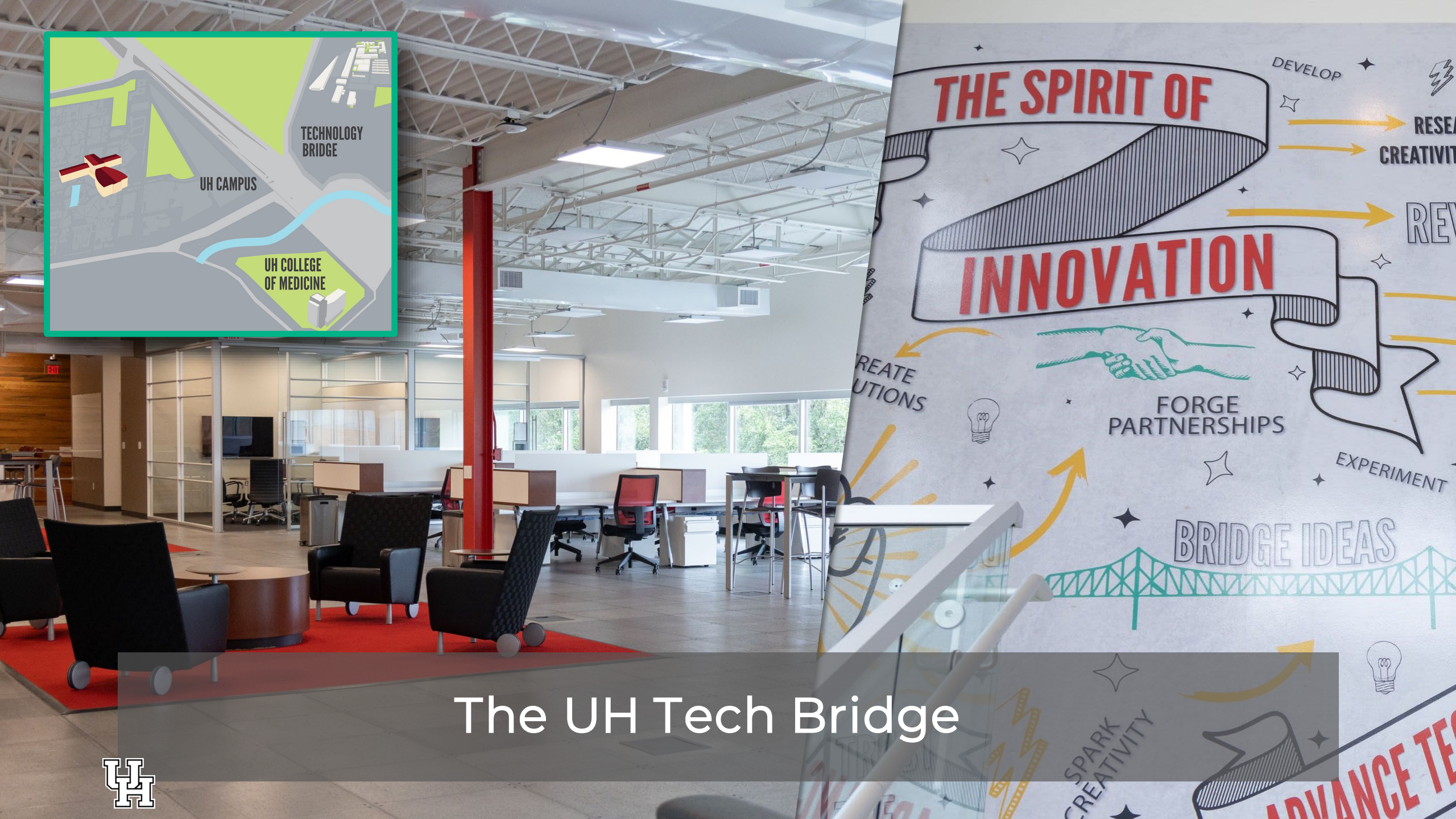
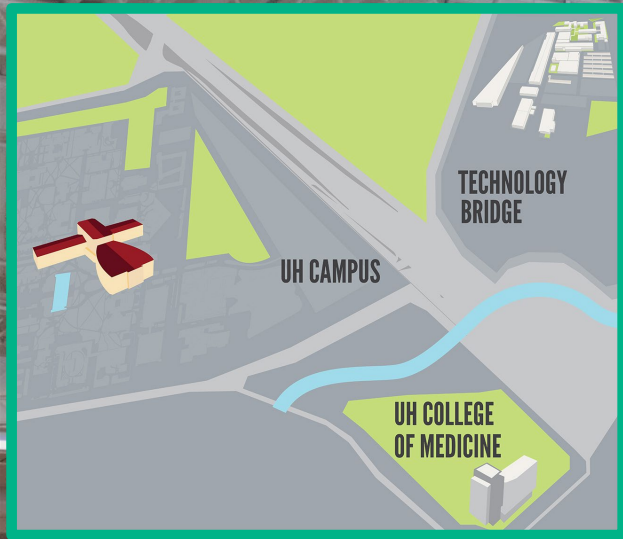
- Harvard Business



What is **innov8hub**?

- + Founder-driven series of entrepreneurial programs;
- + For UH early-stage ventures and entrepreneurs;
- + Located at the UH Tech Bridge, in person and virtually;
- + Designed for scientists, students and researchers, to apply for SBIR/STTR grants, business plan competitions, access mentors, advisors and pro-bono services
- + Goal is to launch new ventures, develop business plans to raise money and attract C-suite level employees to join their team.





The UH Tech Bridge



THE BRIDGE ECOSYSTEM

The Bridge is home to many industrial and university activities related to research and innovation. More than \$75 million has been invested in park development so far.

Checkout the map for a current snapshot of major tenants in the park.

- Building 1 - Schlumberger Building
- Building 1A - UH Administration Building
- Building 2 - UH Administration Building
- Building 3 - UH Administration Building
- Building 4 - Innovation Center
- Building 5 - Incubator Labs
- Building 6 - WidgetCo
- Building 7 - EXXONMOBIL Consortium
- Building 8 - Mayer Electric Supply
- Building 9 - UH Petroleum Engineering
- Building 10 - Third-party Tenant
- Building 11 - UH Petroleum Engineering Annex
- Building 13 - Storage Warehouse
- Building 14A - Texas Center for Clean Engines, Emissions and Fuels
- Building 14B - Third-party Tenant
- Building 15 - Advanced Manufacturing Institute
- Building 19 - Arte Publico Press





Wolff Center for Entrepreneurship

🏠 > CENTERS > WCE > PROGRAMS > RED LABS SUMMER ACCELERATOR PROGRAM

HOME

BBA IN ENTREPRENEURSHIP +

ENTREPRENEURSHIP CLASSES

ENTREPRENEURSHIP CERTIFICATES

PROGRAMS -

RED Labs Summer Accelerator

Wolfffest

Founders' Club

UH Holiday Market

WCE Pitch Competition

Start A Business Toolkit Series

EVENTS & MEDIA +

PEOPLE +

RED Labs Summer Accelerator Program



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Energy & Innovation

Events

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All Events

Event Type

Date

Categories



EI - ENERGY

Decarbonization Congress

 February 3 – 4, 2025. 8:00 AM - 5:00 PM

 University of Houston - Student Center South Houston Room, Theater Room

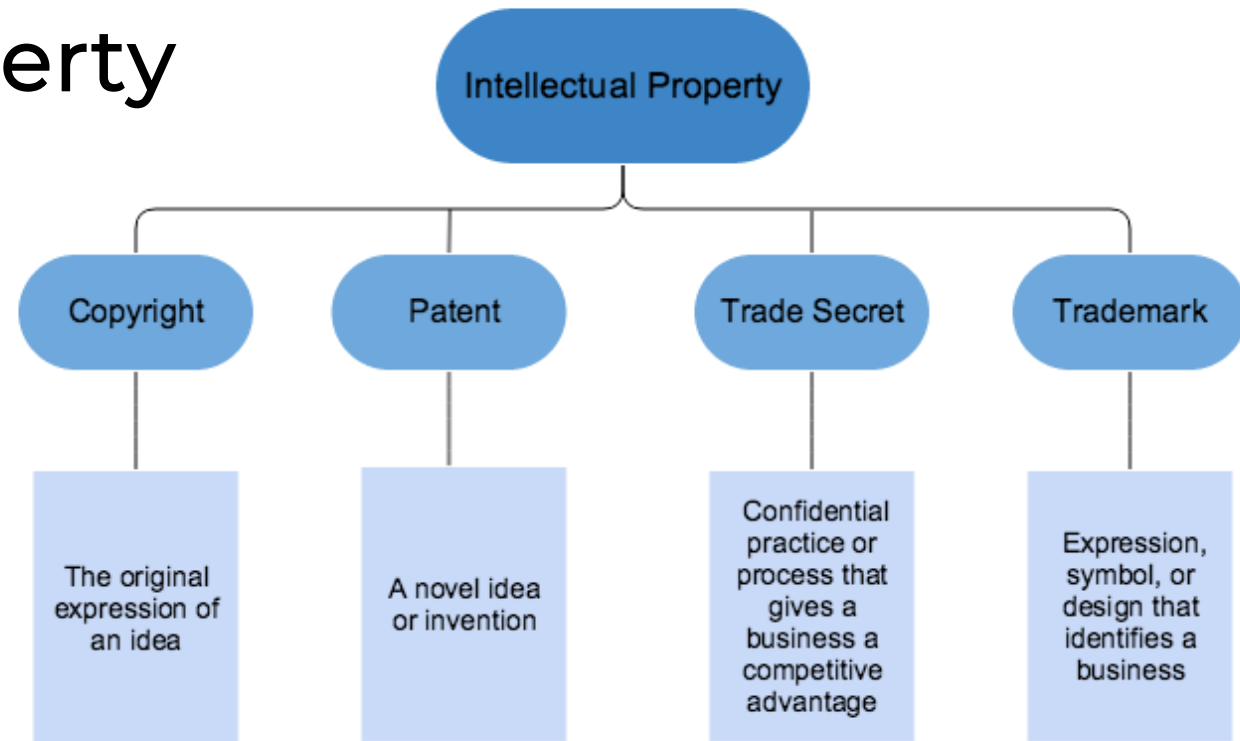
 \$100.00 - \$600.00

Intellectual property 101



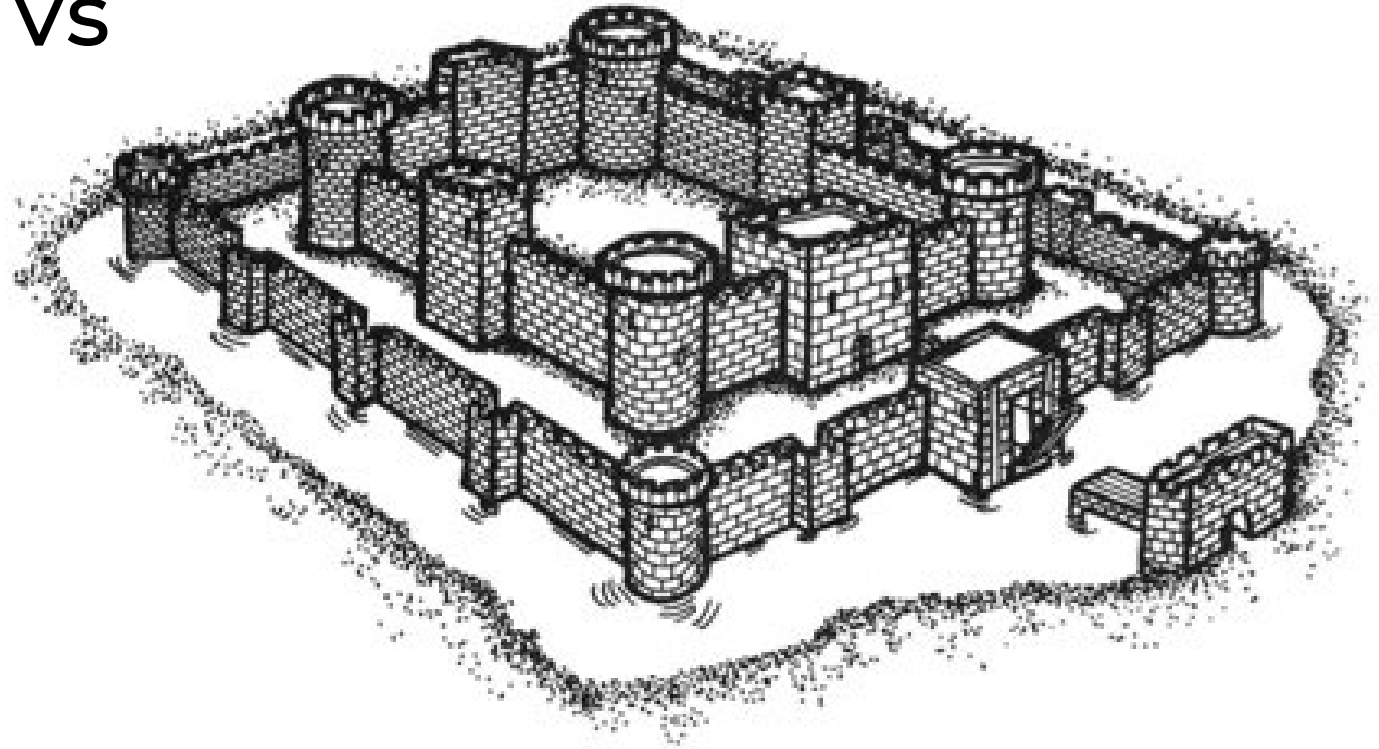
Intellectual property definitions

- + Copyrights - protect intellectual works of art;
- + Patents – grant property rights for new and useful inventions;
- + Trade secrets – confidential information which gives a competitive advantage;
- + Trademarks - word, phrase, symbol, or design that identifies a brand.

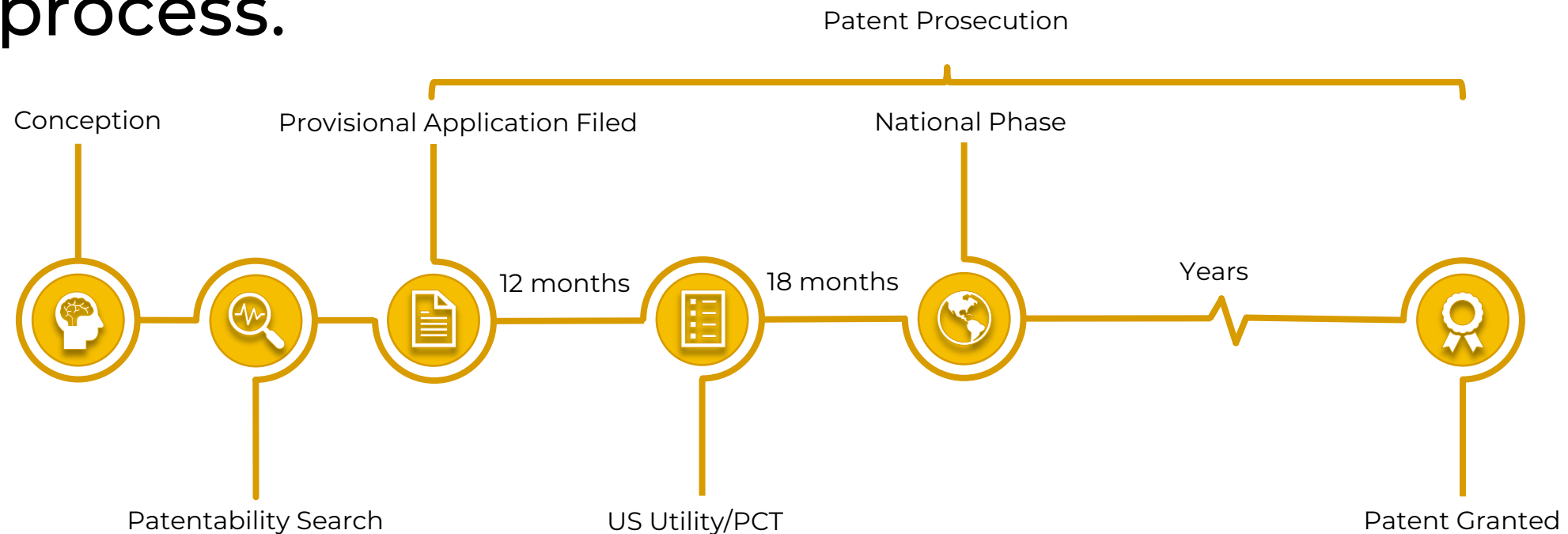


Right to exclude vs right to practice

- + Patents give owners the right to exclude others from using or selling the claimed invention.
- + A granted patent does not ensure freedom to operate.
- + Products often include the use of several patented concepts, and licenses may be needed to include those concepts.



Patent prosecution is a lengthy, expensive process.



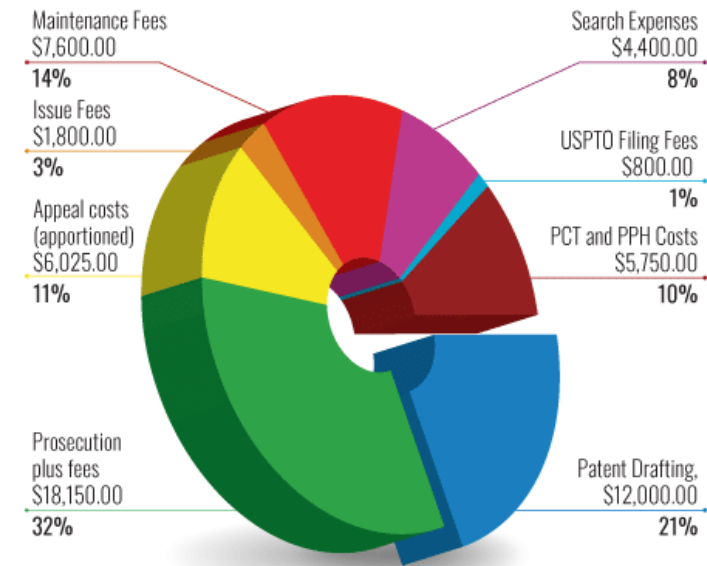
High costs of patenting influence timing.

UH is generally prepared to support patenting through the submission process but cannot carry the costs of prosecution. Competing factors must be weighed in determining if/when to file, factors include

- + If/when invention may be disclosed through publication/presentation;
- + Likelihood that another may be working on a similar technology;
- + Whether the technology has technical maturity/sufficient data to interest prospective licensees before high costs of prosecution.

TOTAL COST: \$56,525

Fees paid to USPTO and WIPO \$12,100
Fees paid to Patent Attorney \$44,425



Source: <https://blueironip.com/how-much-does-a-patent-cost/>

IP commercialization



Obligation to disclose

- + Inventors are obliged to disclose whenever new IP is developed.
- + Disclose as soon as commercial potential is recognized.

D. *Disclosure of Technology.* Carefully planned methods of transferring Board-owned rights in technology will best accomplish the objectives stated in the "Purpose" section of this policy. The University can accomplish those objectives only if inventors promptly disclose technology. Premature publication of information pertaining to discoveries and inventions, or delayed prosecution of patent protection, can damage seriously the ability to obtain patent protection. **Therefore, if a person conceives or reduces to practice any technology, that person must disclose such technology to the University as soon as practicable after the date of first conception or discovery. Certain research agreements may require disclosure, and in such a case a person shall disclose technology in accordance with the agreement.** To make a proper disclosure, the inventor must prepare, sign, and date a patent disclosure in the form promulgated by the University. The inventor must also include pertinent data or illustrations to show the principle of the technology.

UH BOR Policy 21.08.3

Do not wait until you've given a presentation or published a paper!

The invention disclosure form

- + Not “just housekeeping” or mandatory paperwork (although it is required by law);
- + Initiates the process for ultimately protecting your intellectual property.

The image shows a document titled "INTELLECTUAL PROPERTY DISCLOSURE FORM" from the University of Houston. At the top left is the UH logo and the text "Division of Energy and Innovation UNIVERSITY OF HOUSTON". To the right is a box labeled "Official Use Only" with "UHID: _____". Below this is "Office of Technology Transfer and Innovation (OTTI)". The main title is "INTELLECTUAL PROPERTY DISCLOSURE FORM". Under "INSTRUCTIONS", it states the purpose of the form and provides contact information: "oipm@central.uh.edu". The form contains six numbered sections: 1. Title of Intellectual Property; 2. Brief Description of Intellectual Property; 3. Type of Intellectual Property (check all that apply); 4. Technology Category (check all that apply); 5. Related intellectual property disclosure(s) previously submitted to UH; 6. Describe what problem the technology solves. Section 3 includes checkboxes for Invention (Patent), Copyrighted Work, Software, Know-How, and Other. Section 4 includes checkboxes for various technology categories like Advanced Materials, Agriculture, Artificial Intelligence, Biotechnology, Chemicals, Clean Technology, Construction Materials, Diagnostics, Digital Health, Energy Equipment & Services, Energy Storage, IoT, Life Sciences Tools & Services, Methods/Know-How, Oil & Gas, Optometry/Ophthalmology, Robotics, Semiconductors, Software & Services, Superconductors, Technology Hardware & Equipment, and Therapeutics. At the bottom right, it says "Intellectual Property Disclosure Form (updated Sept 2024)" and "1 of 9".

*IDF can be found online: <https://uh.edu/uh-energy-innovation/uh-innovation/technology-transfer/>

What it is

- + Confidential document to communicate invention to OTTI;
- + Basis for preliminary inventor interview and subsequent assessment;
- + Final document for seeking IP protection and commercialization.

What it is not

- + Sufficient for IP protection;
- + A guarantee of patent submission or award;
- + A document that describes all aspects of the invention.

The disclosure form, by itself, offers no IP protection!

What is the disclosure process, step by step?

- + What is the invention?
- + How was the work funded?
- + When was it conceived?
- + Who are the inventors?



Division of Energy and Innovation
UNIVERSITY OF HOUSTON

Office of Technology Transfer and Innovation (OTTI)

Official Use Only
UHID: _____

INTELLECTUAL PROPERTY DISCLOSURE FORM

INSTRUCTIONS

The purpose of this form is to notify the Office of Technology Transfer and Innovation (OTTI) of your intellectual property in compliance with the [UH System Board of Regents Policy on Intellectual Property 21.08](#) and capture relevant information regarding the IP, sponsorship, publication history, and commercial partners. Where appropriate, OTTI endeavors to license UH inventions to industry for further development and commercialization. Please complete this form and send a signed copy to oitpm@central.uh.edu. For questions please, contact OTTI at 713-743-1545 or by e-mail.

1. **Title of Intellectual Property:** _____
2. **Brief Description of Intellectual Property:** _____
3. **Type of Intellectual Property (check all that apply):**
☐ Invention (Patent) ☐ Copyrighted Work ☐ Software ☐ Know-How
☐ Other: _____
4. **Technology Category (check all that apply):**
☐ Advanced Materials ☐ Agriculture ☐ Artificial Intelligence ☐ Biotechnology
☐ Chemicals ☐ Clean Technology ☐ Construction Materials ☐ Diagnostics
☐ Digital Health ☐ Energy Equipment & Services ☐ Energy Storage ☐ IoT
☐ Life Sciences Tools & Services ☐ Methods/Know-How ☐ Oil & Gas
☐ Optometry/Ophthalmology ☐ Robotics ☐ Semiconductors ☐ Software & Services
☐ Superconductors ☐ Technology Hardware & Equipment ☐ Therapeutics
☐ Other: _____
5. **Related intellectual property disclosure(s) previously submitted to UH:** _____
6. **Describe what problem the technology solves:** _____

Intellectual Property Disclosure Form
(updated Sept 2024)

1 of 9



Division of Energy and Innovation
UNIVERSITY OF HOUSTON



Office of Technology Transfer and Innovation (OTTI)

Official Use Only
UHID: _____

INTELLECTUAL PROPERTY DISCLOSURE FORM

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1. **Title of Intellectual Property:**
2. **Brief Description of Intellectual Property:**

Title and Description

- + Disclosure number (UHID) will be assigned by UH and used for internal references;
- + Brief description of IP is akin to an abstract;
- + There **must** be a comprehensive description of the IP submitted at the same time as disclosure, this could be in many different forms such as a draft of a manuscript, dissertation, etc.

12. **SPONSORSHIP AND FUNDING**

The following are a brief series of questions regarding the sponsorship or funding for the invention described in this disclosure. Please answer the following questions as thoroughly as possible.

This disclosure has no sponsorship: ☐

Federally funded? (e.g. National Institute of Health, National Science Foundation, etc.)

☐ Yes ☐ No

If yes name federal entity: _____ Award No.: _____

If no, name entity: _____ Award No.: _____

CPRIT grant?

☐ Yes ☐ No

If yes, list award: _____

STTR or SBIR?

☐ STTR ☐ SBIR ☐ Neither

STTR Award No.: _____

SBIR Award No.: _____

Is this invention funded (at least in part) by an existing licensee?

☐ Yes ☐ No

If yes, name licensee: _____

Relevant grant and sponsorship information are evaluated for impact on resulting IP

- + Were external grants or sponsorships used to develop the IP? (e.g. Federal sources or sponsored research agreements);
- + Are there any other agreements into which the inventor has entered that might impact the rights to the generated IP?



16. **INVENTOR/AUTHOR/CONTRIBUTOR:**

An **“inventor”** is any person(s) who contributes in whole or in part to the conception of the invention, not one that contributes solely to the reduction of the invention to practice. Conception is the formation in the mind of the inventor(s) a definite and permanent idea of the complete and operable invention, as it is to be applied in practice.

An **“author”** is any person(s) who contributed in whole or in part to a copyrighted work by expression of the idea in a tangible medium.

A **“contributor”** is any person(s), who is not an inventor or an author, but is recognized by the inventors or authors as having made a contribution to the IP, and who is to share in any and all future revenues, including equity and any other sources, from commercialization of the intellectual property in the proportions set forth in the percentage of contribution as if they were an inventor or author.

This section is for UH Inventor/Author/Contributors

I hereby declare that all statements made herein to my own knowledge are true. I hereby assign all right, title and interest of this intellectual property to the University of Houston and agree to execute all documents as requested, assigning to UH the rights of all patent applications filed on this invention, to cooperate with the Office of Technology Transfer and Innovation in the protection of this invention, and comply with UH's Intellectual Property policy.

Individual 1. Primary Investigator (PI for purposes of the disclosure only).

Is PI also an inventor/author? ☐ Yes ☐ No

Name	Title	% Contribution
College:	Department and/or Center:	Campus:
Description of contribution:		
Home Address		Permanent Address (if different than Home)
Employee ID #:	Country of Citizenship:	Telephone:
Work Email:		Personal Email:

The university owns IP as a condition of employment.

Inventors

- + Must be listed, including those outside of UH;
- + Are individuals who contributed to what becomes the patent claims - ideas not effort;
- + Who believe their IP was developed without use of university resources MUST provide a written basis for that opinion which is convincing and explicit;

Inventorship



Authorship

- + Contributes to conception or reduction to practice in a significant manner;
- + Legally defined;
- + Order is legally irrelevant.

- + Contributes to writing a particular work;
- + Subjectively decided;
- + Order typically reflects level of contribution.

Not understanding the difference can invalidate your patent!





How can inventors help?

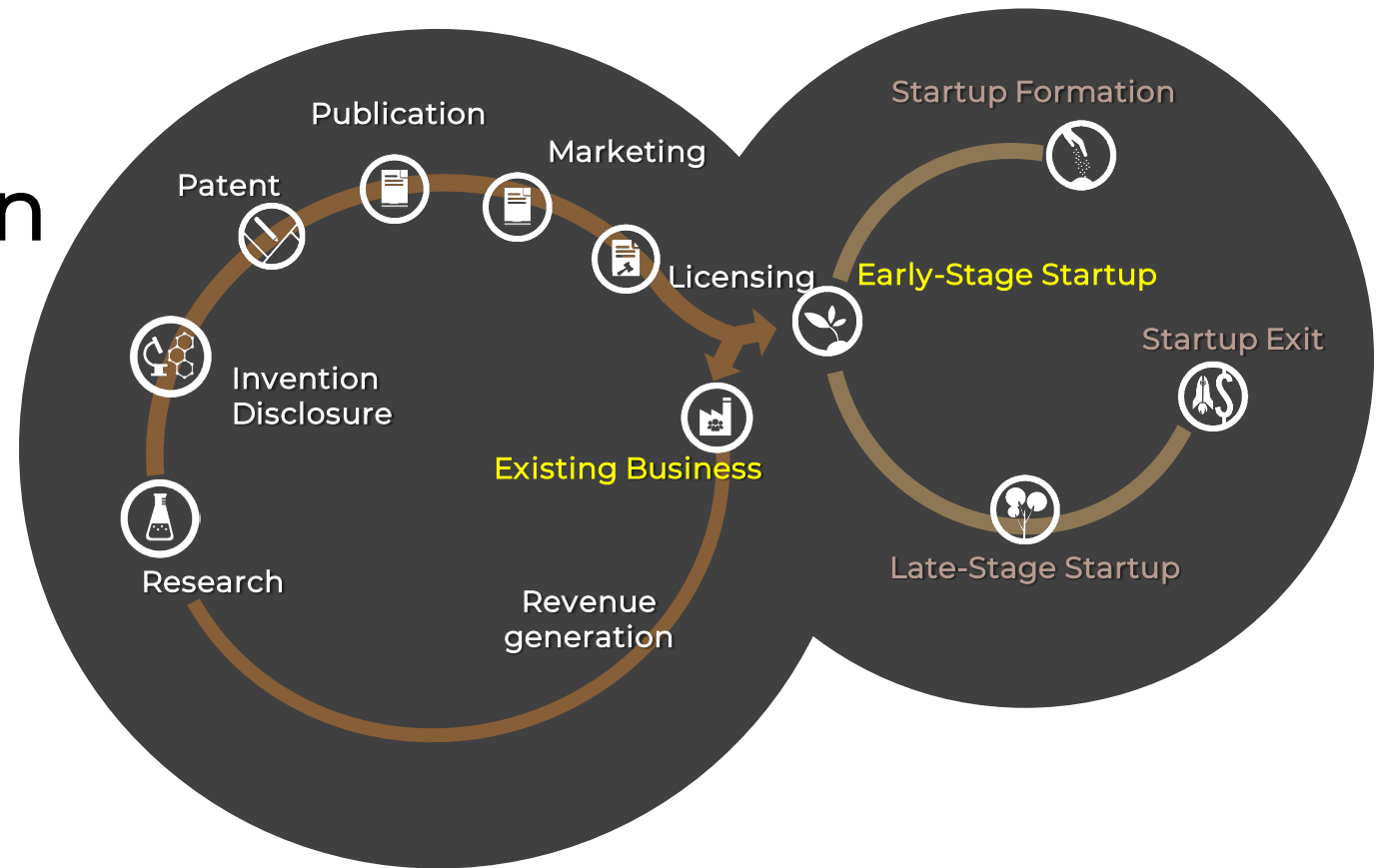
- + Provide as much detail as possible about the invention
- + Help us understand possible applications and use cases to inform outreach strategy.
- + Provide any competitors, similar technologies, etc. to inform the assessment.
- + Be available to meet with prospective partners.
- + What else? Contact us!

Marketing and Licensing



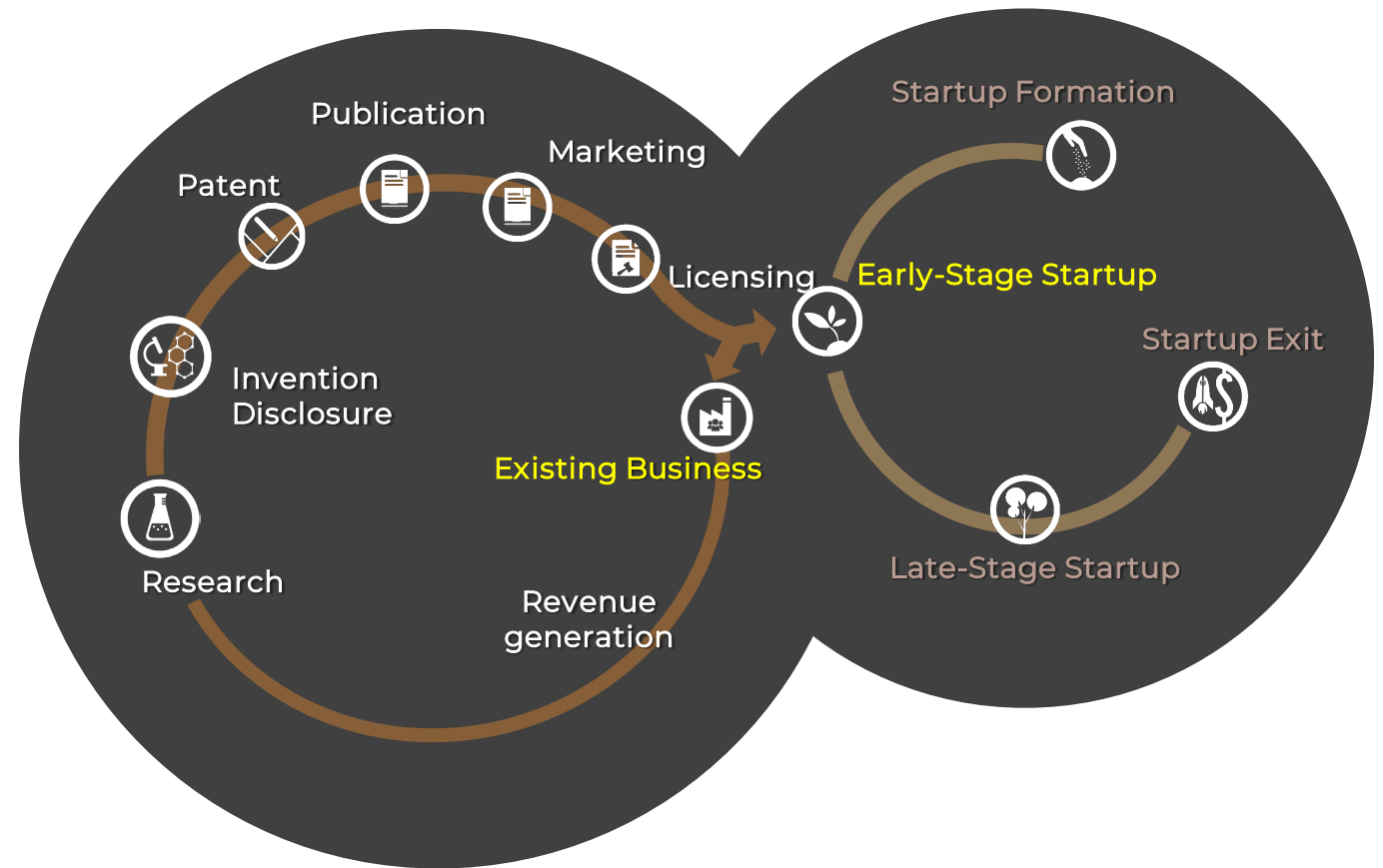
Technology Commercialization Cycle

- + The process is often circular, not linear.
- + We both have important roles.
- + Together, we break it down and move step-by-step.



Creating impact

- + A license to IP is often more about the commitment to partnership than the value of the IP, particularly given the uncertain path to patent award.
- + Licenses offer a range of ways to compensate the university and inventors for access to the invention and, in many cases, additional collaborative research.



MEET THE DIRECTOR

Chanelle Mack

Director Intellectual Property, UH OTTI

Chanelle Mack is an attorney whose practice includes intellectual property prosecution, counseling, and drafting and reviewing licensing agreements. Chanelle has prosecuted patent applications in the areas of computer software, computer hardware, oil and gas technology, medical devices, and nautical vessels. Chanelle was also a former patent examiner at the United States Patent and Trademark Office (USPTO). Her other previous technical experience includes working as network analyst/engineer and an engineer for a major defense contractors.





Why do universities market intellectual property?

- + Puts the available technologies directly in front of potential licensees;
- + Generates leads that result in license deals, sponsored research programs or other kinds of engagements;
- + Strengthens and increases the university's profile;
- + Builds relationships with industry;
- + Increases societal impact of IP through commercialization;
- + Shares rewards with inventors for their impactful work.

How do we reach prospective licensees?

Active

- + Outreach as an extension of the assessment process;
- + Working with the OTTI team and faculty to identify industry partners who may have an interest;
- + Evaluating the patent landscape to identify companies working in the space;
- + Developing technology summaries and pushing to social media contacts.

Passive

- + Posting news to our website and pushing to social media channels;
- + Celebration of inventors and their scientific contributions;
- + Creating and publishing blogs and whitepapers;
- + Post to the UH technology marketplace and other third-party databases

Our IP marketplace.

INTELLECTUAL PROPERTY

UH maintains a strong intellectual property portfolio that continues to gain momentum every year. For several years now, UH has led the nation in royalty earnings among public universities without medical schools.

Categories

Enter Search Term

Case ID	Technology	Licensable
2023-034	Downregulation of Rhodopsin as a Therapeutic Strategy for Peripherin-2-Associated Inherited Retinal Disorders	✓
2023-020	INHIBITORS OF IL-15 AND THEIR USE IN TREATING OR PREVENTING SEPSIS, SEVERE SEPSIS AND SEPTIC SHOCK	✓
2023-013	ARTIFICIAL INTELLIGENCE MODELING THAT CONSTRUCTS A FREE ENERGY SURFACE TO ENCODE A DATA DISTRIBUTION	✓
2023-012	COMPOSITES CONTAINING MAGNETICALLY ALIGNED GRAPHENE NANOSHEETS AND METHODS OF MANUFACTURE THEREOF	✓
2023-010	MET SCORE: A CLINICAL DECISION SUPPORT SYSTEM	✓
2023-007	NICKEL CATALYSTS WITH SINGLE ALKALI IONS FOR HOMOPOLYMERIZATION AND COPOLYMERIZATION	✓
2023-006	NICKEL CATALYSTS WITH SINGLE METAL CATIONS FOR HOMOPOLYMERIZATION AND COPOLYMERIZATION	✓

Downregulation of Rhodopsin as a Therapeutic Strategy for Peripherin-2-Associated Inherited Retinal Disorders

We have identified rhodopsin as a therapeutic target for peripherin-2 associated diseases. Proof of concept studies were undertaken to demonstrate the application of this strategy across different peripheral-2 mutations using genetically modified animals. This strategy was then therapeutically translated using a previously characterized antisense oligonucleotide (see citations below) mRHO ASO1 to downregulate wild type rhodopsin levels in murine peripherin-2 patient disease models resulting in delayed disease progression.

	App Type	Case No.	Country	Patent/Publication No.
Inquire	PCT	2023-034	PCT	WO 2024/151862

Case ID

2023-034

Inventors

Contact

[Christian Woods](#)

Categories

[Chemicals](#)
[Therapeutics](#)
[Biotechnology/Technology](#)



What we look for in promising partners

- + Clear plan for continued development of the product or service;
- + Sufficient capitalization;
- + Commitment to partnership with you, the inventor;
- + Willingness to share in upside.



How can inventors help?

- + Let us know who you think might be interested: experts, industry contacts, observers, etc.
- + Help us understand possible applications and use cases to inform outreach strategy.
- + Provide any competitors, similar technologies, etc. to inform the assessment.
- + Be available to meet with prospective partners.
- + What else? Contact us!

Upcoming changes



MEET THE DIRECTOR

Gavin Garvey

Director for Industry Engagement, UH OTTI

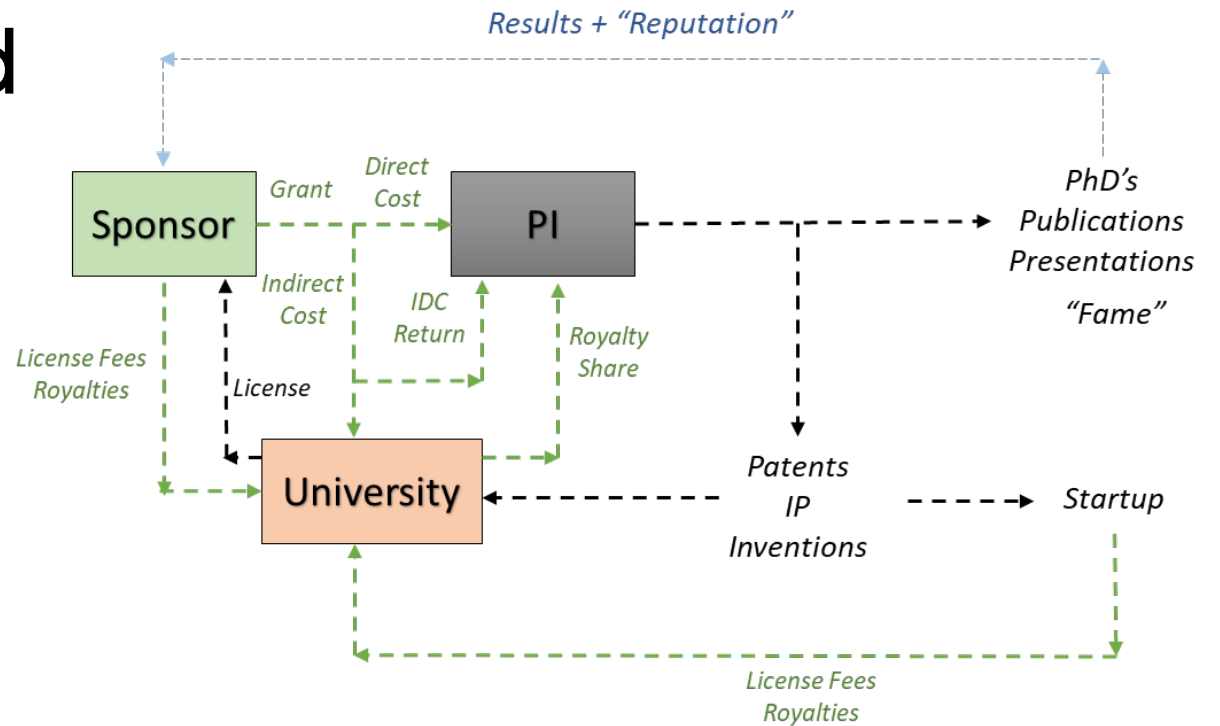
Gavin has co-founded and mentored multiple startups based on university-derived inventions. His background includes expertise in scientific research, business development, technology marketing, and license negotiation. He has earned a Ph.D. in chemical engineering from the University of Houston and an MBA from the University of Houston – Clear Lake Campus.



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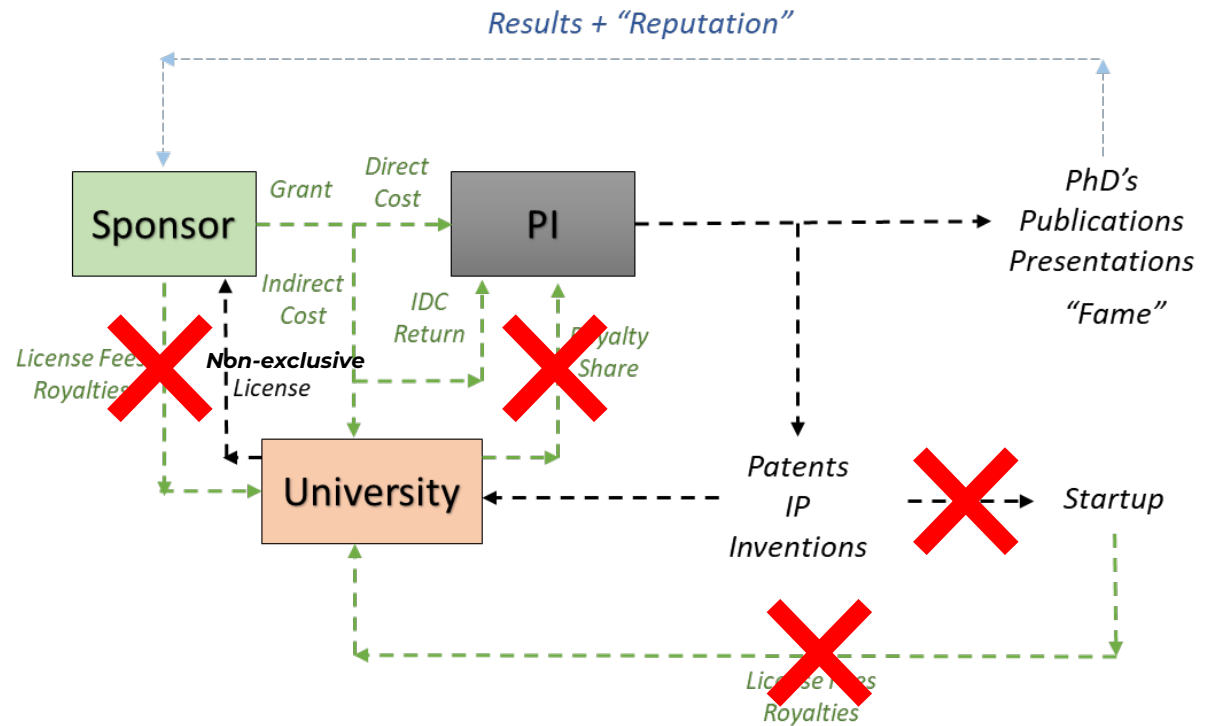
Industry Sponsored Grant Process

- + Industry funding is potentially significant untapped source
- + Many companies deterred by unfriendly university IP policy
- + Industry funding typically exceeds revenues from licensed university
- + This reality motivates a more enlightened IP approach



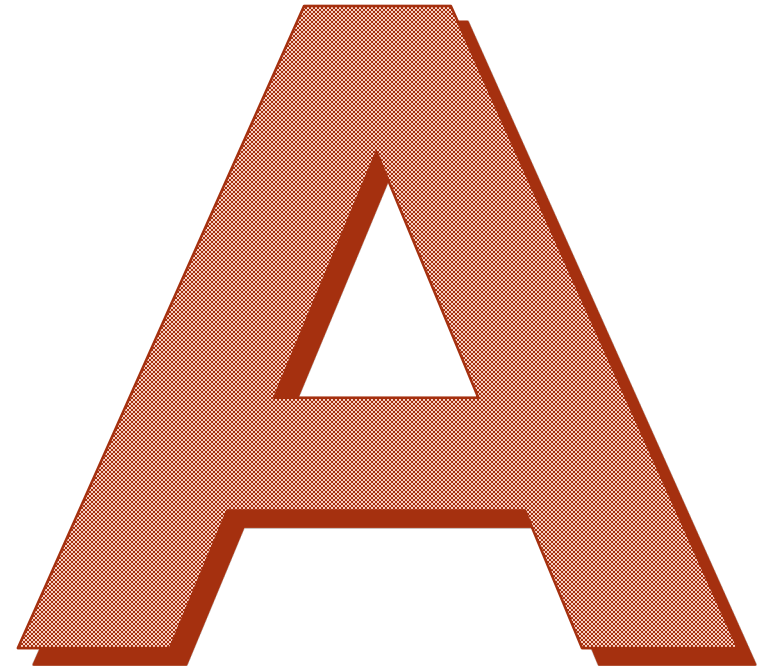
“Preferred IP” Industry Sponsored Grant Process

- + Relinquishing IP to sponsor for nominal upfront fee will increase prospects for industry funding
- + A win-win-win for Industry Sponsor, university, & PI



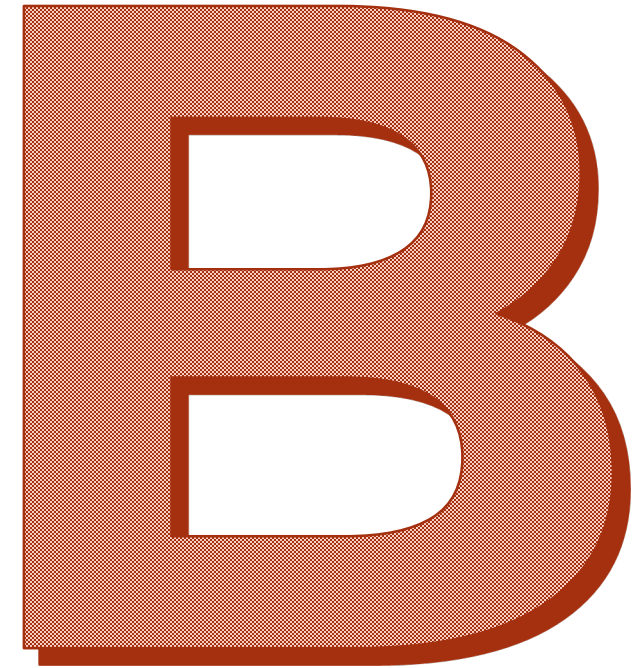
“Preferred IP” Options

Option A: This option follows the conventional approach in which the sponsor and university negotiate a royalty-bearing non-exclusive or exclusive license on IP developed in the project. There are no upfront fees or pre-set royalties. This option is the default option should the Principal Investigator (PI) and/or Sponsor not agree to Options B and C.



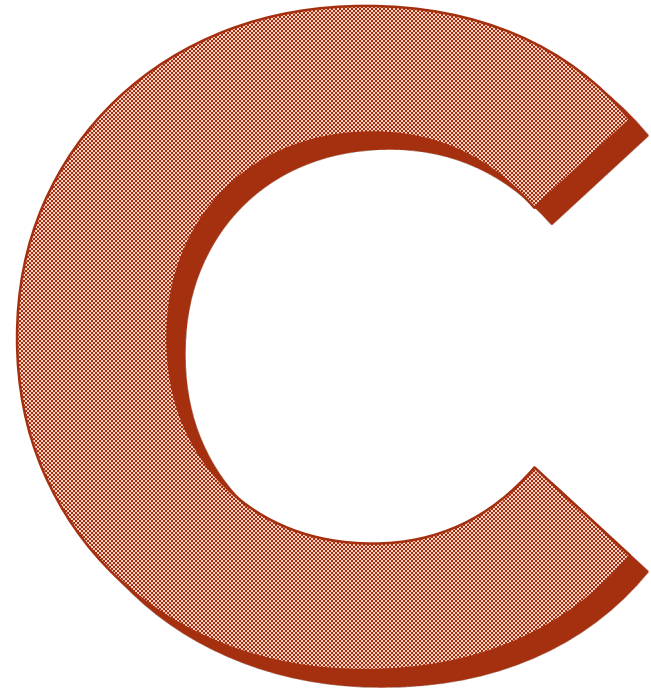
“Preferred IP” Options

Option B: This option requires the sponsor to pay an upfront fee of 15% of the total sponsored project cost, or \$30K (whichever is greater) in return for an exclusive worldwide license to all project inventions. The option also includes a threshold clause that requires the sponsor to pay 1% royalties on net sales exceeding \$20 million utilizing the project IP. Additional terms including sub-licensing, cap on royalties, other fees, etc. are negotiable. **The PI must agree to this option.**



“Preferred IP” Options

Option C: This option requires the sponsor to pay an upfront fee of 10% of sponsored project cost, or \$10k (whichever is greater) for a royalty-free, non-exclusive license to all project inventions. The sponsor may not sub-license or cross-license. Other terms are negotiable. **The PI must agree to this option.**



“Preferred IP” Process Steps

- + Faculty researchers and UH OTTI staff engage potential industry sponsor UH Preferred IP Program (UH-PIPP) policy.
- + In the IP section of the Sponsored Research Agreement, Sponsor must select Option A, B, or C of the UH-PIPP Option Sheet.
- + Faculty researchers sign off on SRA which includes selected PIPP option.
- + Should Sponsor select Option B or C, research project budget must include the upfront fee.
- + Faculty researchers complete and approve Transmittal Form for the Industry-Sponsored Project.
- + Faculty researchers complete and sign Industry-Sponsored Proposal Checklist.

Who to contact

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THANK YOU!