



RESEARCH FOUNDATION

Moving Innovations to the Marketplace:
The Tech Transfer Process at UT

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DISCLAIMER

This is Not Legal Advice

*I am not an attorney or legal counsel for the University of Tennessee or UTRF. I am not licensed to practice law in Tennessee and the information that I provide does not constitute legal advice or counsel.

UTRF MISSION



**Research
Growth**



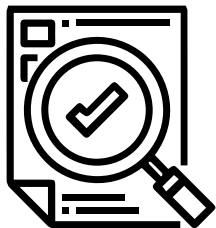
**Intellectual Property
Commercialization**



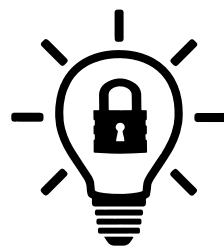
**Entrepreneurial
Culture**



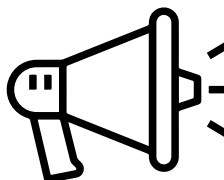
**Economic
Development**



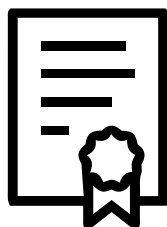
*Invention
Evaluation*



*Patents,
Copyrights, &
Trademarks*



*Technology
Marketing*



*License
Negotiation*

UTRF SERVICES

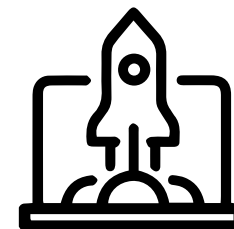
*Sponsored
Research
Partnerships*



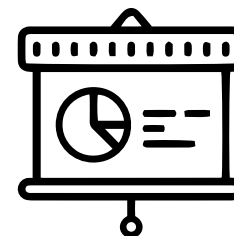
*Royalty
Collection &
Distribution*



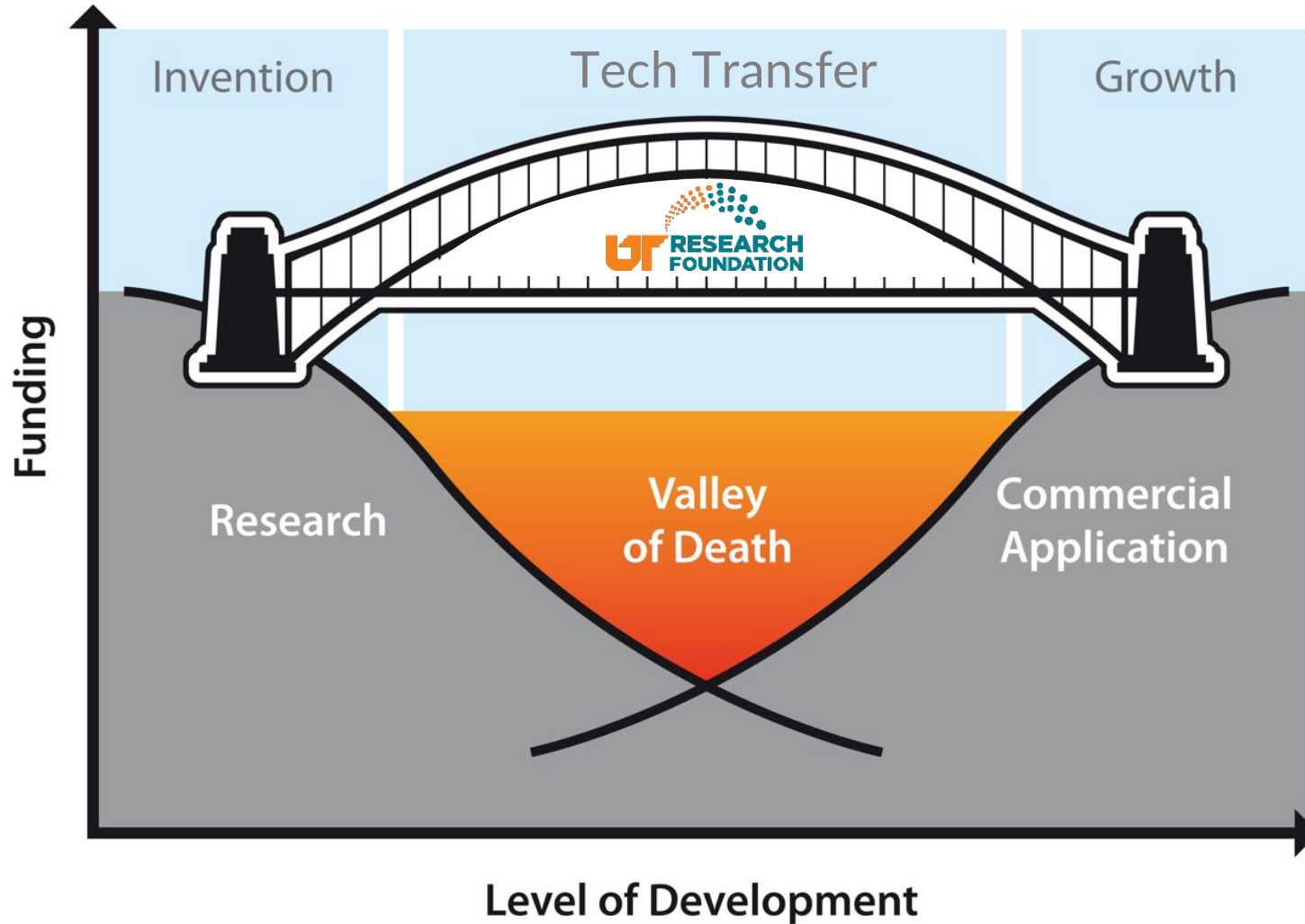
*Startup
Support*



*Educational
Seminars*



WORKING WITH UTRF

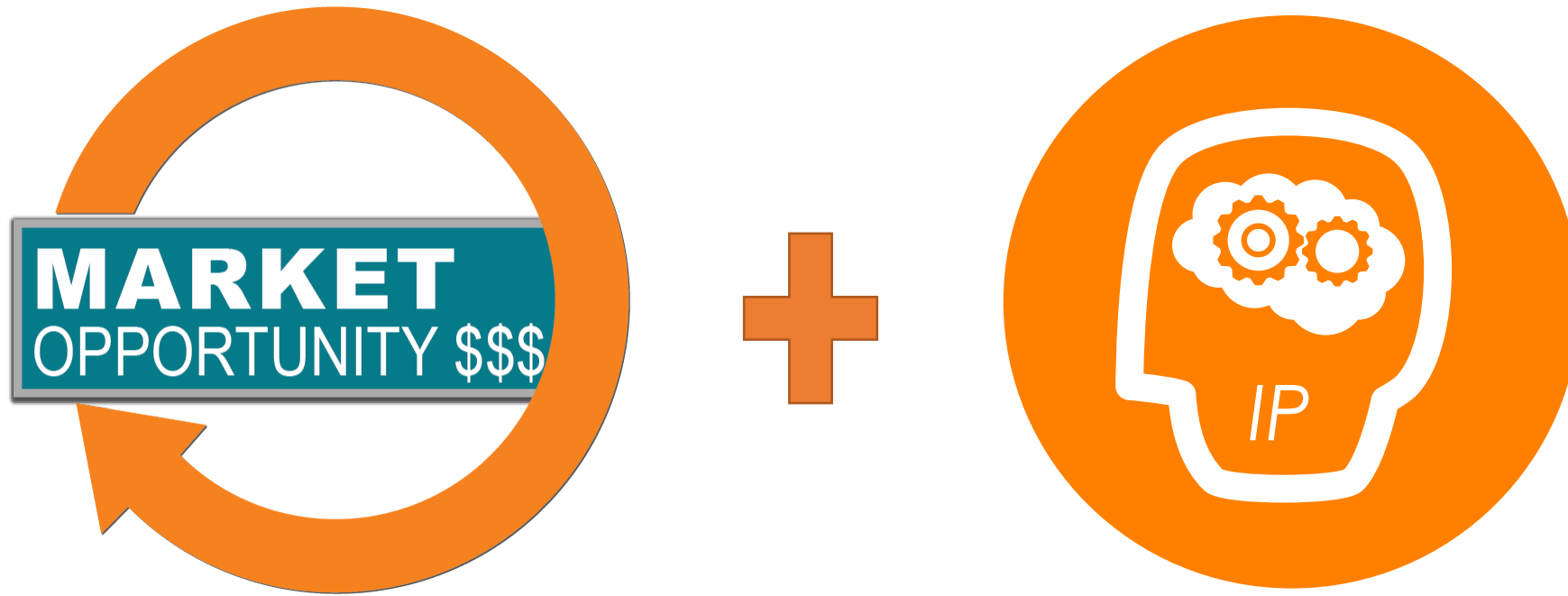


UTRF is the bridge helping to take early-stage innovations to industry.

UTRF connects UT's research community to industry and startups by strategically evaluating, protecting, and licensing technology.

Image: gemaker.com.au/preparing-your-plan/

TECHNOLOGY EVALUATION CRITERIA





Intellectual Property 101



WHAT IS INTELLECTUAL PROPERTY (IP)?

Intellectual Property (IP) is the basis for research commercialization.

- **Creation of the human mind or intellect – INNOVATION**
- Intangible, exclusive rights.
- Property, may be assigned, sold, leased, etc.
- Innovation = Package of IP Rights
- **AGREEMENTS CAN DETERMINE OWNERSHIP AND USE**

“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”

– U.S. Const. art. 1, §8, cl. 8

Ideas are not IP

Ideas are NOT protectable, except by confidentiality.

WHAT IS A PATENT?

For new and nonobvious useful inventions.

Provides a **legal right to exclude** others from:

- Making, Using , Selling, Importing
- The claimed invention

Jurisdictional, expensive, and slow:

- 3-5 Years to Issue on average
- USA often \$25K+
- Country specific coverage

A document that provides a limited monopoly,
not the right to practice the invention.



TYPES OF PATENTS

Utility

New products and processes



20 years

Design

Protects how something *looks*



14 years

Plant

New, asexually reproduced varieties



20 years

PATENT APPLICATION REQUIREMENTS



Utility

Disclosed &
Enabled



Novel

Nonobvious

Is it an obvious solution if 2 or more
references are combined?



***** Prior art is anything that can be used against your claims of originality
including your own work!**

LOSS OF PATENT RIGHTS

A public disclosure of the invention without filing an application may destroy patent rights.

Public Disclosure = Public Access + Enabling Information:

- Poster Presentations and Oral Paper Presentations
 - Publication of Manuscripts and Pre-Prints
 - including arXiv
 - Some Proposals and Awards
 - Public Thesis/Dissertation Defense
 - Online /Social Media – can you google it
- Use a non-enabling description
 - Value focused
 - Work with UTRF to File Provisional Patent Applications
 - Rough Draft that is cheaper, and holds your spot in line for 12 months
 - Use Confidentiality Agreements
 - Contact ORIED / UTRF

WHAT IS COPYRIGHT?

Copyright protection subsists... in original works of authorship fixed in any tangible medium of expression... otherwise communicated, either directly or with the aid of a machine or device. (17 U.S.C. §102)

Applicable for:

- Code and Software*
- CAD, Drawings, and Simulations
- Datasets
- Works of artistic expression, music, architecture, etc.

Protects the expression of an idea only

HOW TO GET COPYRIGHT PROTECTION?

Protection Starts

- Immediately when fixed in a tangible medium of expression.

Ownership

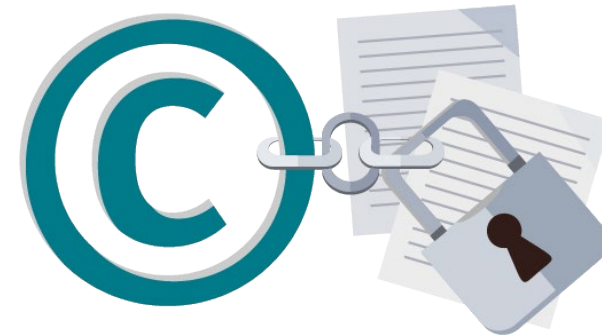
- Creator is default owner
- Agreements can and often control

Filing requirement

- None for protection
- Requirement to bring suit

Duration

- Individual – Life +70 years
- Business - 95 years after pub OR 120 years after creation, whichever occurs first

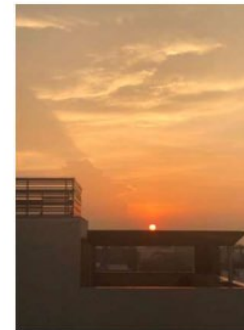


GENERATIVE AI AND IP

- Patents need inventors. © needs authors. HUMANS ONLY
 - If AI is the Author = no ©
 - If AI is the sole inventor = no patent
- Assisting vs. Authorship?
 - Distance between input & output
 - Requires Complete Control
 - Prompts alone do not show complete control
 - May have to disclose AI involvement
- Zharya – Graphic novel → Text, Images, Arrangement
 - Text = © , Images = no ©, Arrangement = ©
 - **May have multiple © in a product**
- SURYAST – © on photo but no © on generated image



SURYAST



+



=



WHAT IS A TRADEMARK?



*Registered
Trademark*

TM

*Unregistered
Trademark*

SM

*Unregistered
Service Trademark*



Think Branding - Distinctive mark that distinguishes a product or service to eliminate consumer confusion

Ownership:

- First to use in commerce – Industry / Product / Location

Duration:

- Forever! – active and consistent use in commerce
- Protect and enforce when needed

Tips

- Check on social media, web domains, google, etc.
- Is there a likelihood of confusion from a consumer viewpoint
- ® is for registered marks only

WHAT IS A TRADE SECRET?



A trade secret is:

- **Confidential** Valuable Business Information
- Establishes an advantage because it is a secret
- Lasts as long as it is a secret – take preventive actions
- **Why not just get a patent to protect it?**

Does not work well if publishing!



WHAT IS KNOW- HOW ?



Know-How is:

- Expertise and other non-traditional IP
- Faster time to a commercial product
 - More product time with patent protection
 - First to market advantage
- Reduced R+D costs
- Journals, Notebooks, techniques, any specialized knowledge that is tangible

INTELLECTUAL PROPERTY



	Patents	Copyright	Trademark	Trade Secrets / Know-How
What is protected?	Inventions: product compositions & processes	Original Works of Authorship: art, drawings, code, writings	Branding: marks the source of goods or services	Confidential Business Information
How is protection obtained?	Application; Examination/Grant	Automatic	Federal: Application; Registration/Grant Local: Use in commerce	Create Secret/Keep Secret
How long does protection last?	20 years from Filing (Utility / Plant) 14 years from Issuance (Design)	Individual: Life +70 years Entity: Earlier of 95 years after publication /125 years after creation	Forever - while used in commerce	Duration of Secrecy
Where to apply for protection?	USPTO	Copyright Office– only to bring suit	USPTO	N/A
What makes it eligible for protection?	Useful, Novel, <u>Nonobvious</u> , Enabling	Original Expression	Distinctive	Secret
Symbol	Patent No. XX, XXX, XXX	©	TM, SM, ®	N/A



Technology Transfer

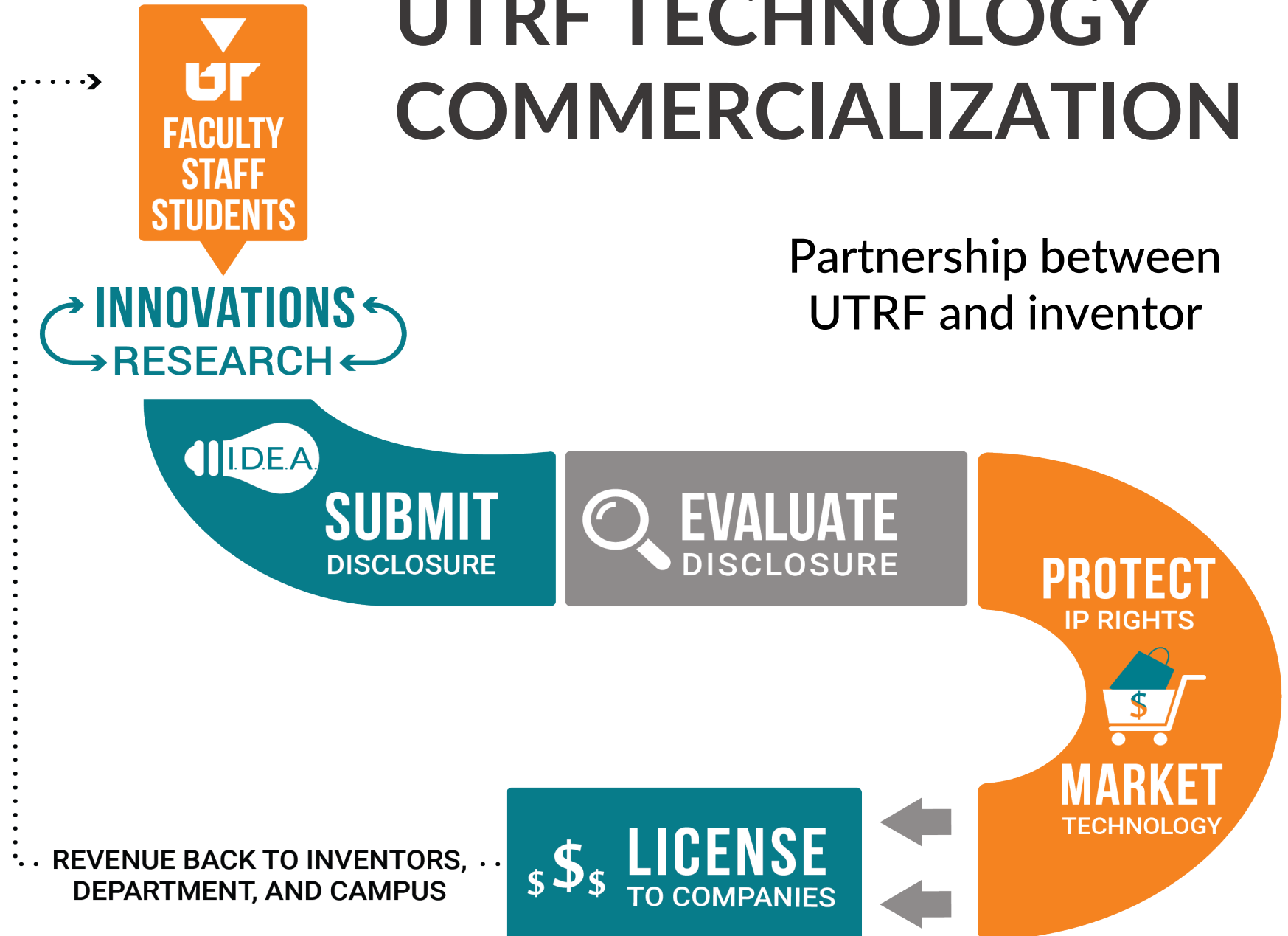
IMPORTANCE OF ESTABLISHING BACKGROUND INTELLECTUAL PROPERTY

- Disclosure = Documentation → Control of IP → Protection of Academic Freedom
- SRA's usually focus on Foreground IP, but not always
- Can be difficult to separate Background IP from Foreground IP later on
- Background IP increases likelihood of licensing and/or startup formation
- Background IP can include a package of various IP rights
 - Patents, Software, Datasets, Know-how, drawings, etc.

Technology Transfer is a process to move innovations from UT to the market place for public benefit.

UTRF TECHNOLOGY COMMERCIALIZATION

Partnership between UTRF and inventor



TYPES OF LICENSES

A Variety of Options

Exclusive

- Available to one party
- Potentially limited to field of use, with:
- Right to grant sublicense

Non-exclusive

- Available to multiple parties
- No right to grant sub license

Limited Non-exclusive

- Available to a limited number of parties

Research License

- 12-24 months internal trial period
- Option for commercial license

Research Tools

- Antibodies, chemical probes, cell lines, germplasms, plant varieties, animal models, etc.

Software

- Commercial paid
- Non-exclusive or term limited exclusive

WHAT CAN BE COMMERCIALIZED?



INVENTIONS

Applicable for patentable subject matter:

- Systems, Compositions, Processes, Machines, Designs
- Hardware, Systems, and Methodology*
 - *Software may implement new methodology

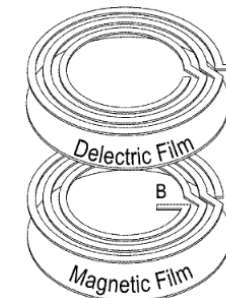
Timing Is Critical

- Public disclosures – upcoming and past
- Federal Funding – we help with reporting
- Rough draft of manuscript / thesis is great time to engage UTRF.

Everyone might not be an inventor

- Inventorship is determined based on intellectual contributions to conception and/or reduction to practice

(12) United States Patent Costinett et al.		(10) Patent No.: US 12,347,602 B2 (45) Date of Patent: Jul. 1, 2025	
(54) SELF-RESONANT COIL WITH SERIES LC RESONANCE AND ELECTRIC FIELD CANCELATION	(58) Field of Classification Search CPC H01F 27/2804; H01F 27/2885; H01F 27/323; H01F 27/36; H01F 27/40; H01F 2027/2809; H02J 50/12; H02J 50/70 (Continued)		
(71) Applicant: University of Tennessee Research Foundation , Knoxville, TN (US)	(56) References Cited U.S. PATENT DOCUMENTS 9,490,656 B2 * 11/2016 Kurz H02J 50/12 9,859,052 B2 * 1/2018 Kurz H01F 27/2882 (Continued) 		
(72) Inventors: Daniel Jes Costinett , Knoxville, TN (US); Jie Li , Knoxville, TN (US); Ruiyang Qin , Knoxville, TN (US)	FOREIGN PATENT DOCUMENTS CN 108270078 B 8/2020 GB 2533695 A 6/2016		
(73) Assignee: University of Tennessee Research Foundation , Knoxville, TN (US)	OTHER PUBLICATIONS International Search Report and Written Opinion corresponding to International Patent Application No. PCT/US2023/020689 dated Sep. 8, 2023. (Continued)		
(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.	<i>Primary Examiner</i> — Alfonso Perez Borroto (74) <i>Attorney, Agent, or Firm</i> — Jenkins, Taylor & Hunt, P.A.		
(21) Appl. No.: 18/862,336	(57) ABSTRACT A coil structure for near-field wireless power transfer, integrating the traditional inductor and external capacitor structure into one single coil and forming a series resonance. The series resonance is achieved by a terminal connection and layering method. The electric field is canceled via a distributed turn-to-turn interleaving structure. With the integrated capacitor, the costs and space of a resonant capacitor can be saved. With the canceled electric field, the interference with neighboring components, such as touch-screen, can be reduced. Other benefits can include low-profile and fabrication convenience based on RGB technology. This coil can be useful for both consumer electronics and electric vehicle wireless charging.		
(22) PCT Filed: May 2, 2023	20 Claims, 24 Drawing Sheets		
(86) PCT No.: PCT/US2023/020689 § 371 (c)(1), (2) Date: Nov. 1, 2024			
(87) PCT Pub. No.: WO2023/215286 PCT Pub. Date: Nov. 9, 2023			
(65) Prior Publication Data US 2025/0118481 A1 Apr. 10, 2025 Related U.S. Application Data			
(60) Provisional application No. 63/337,494, filed on May 2, 2022.			
(51) Int. Cl. H01F 27/28 (2006.01) H01F 27/32 (2006.01) (Continued)			
(52) U.S. Cl. CPC H01F 27/2804 (2013.01); H01F 27/2885 (2013.01); H01F 27/323 (2013.01); (Continued)			



SOFTWARE AND SIMULATIONS

Multiple types of IP

- May be patentable
- © on non-functional aspects of code
 - Less expensive if © only

Additional Factors for Commercialization

- Were any Open-Source Libraries used?
- Was Generative AI used?
- Licensing Strategy - Open, Research, Commercial
- Do you need or want to publish the code?

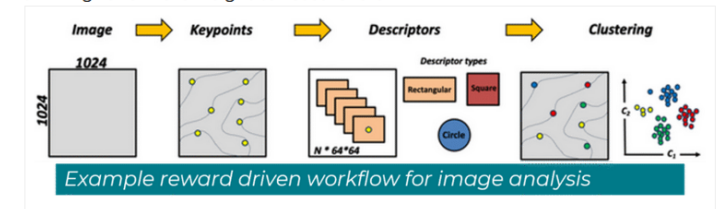
REWARD DRIVEN WORKFLOWS: POST-ACQUISITION & REAL-TIME ANALYSIS

THE PROBLEM

Analyzing imaging and hyperspectral data is a crucial task across various scientific fields, including biology, medicine, chemistry, and physics. Most often, raw data is transformed into a format that is easier for humans to interpret. Currently, this task is performed using complex interactive human-designed methodologies and algorithms, leading to significant time investments and bias introduction. Additionally, neural networks require enormous labeled-data sets and costly training to identify complex features.

THE SOLUTION

Researchers at the University of Tennessee have developed a machine learning, reward driven workflow for image analysis. Machine learning algorithms are rewarded by identifying key, physical features in the images. This approach is robust and explainable, providing unparalleled transparency of the AI model's "thinking" and more insight to researchers.



Once a workflow is developed it is less computationally expensive than large neural networks and can provide real-time image analysis. This innovation can reduce analysis times by orders of magnitude freeing operators to spend more time on critical decision-making, enabling automated experimentation.

DATA AND DATASETS

Data and Datasets can be commercialized

- Often with related software and patents
- Non-exclusive and Express Licensing
- Model training and R+D

Additional Factors for Commercialization

- Where did the data come from?
- Is it /planned to be published or openly available?
- How often will it be updated?

THE U.S. SCHOOL DISTRICT COMPLETE PROFILE DATASET

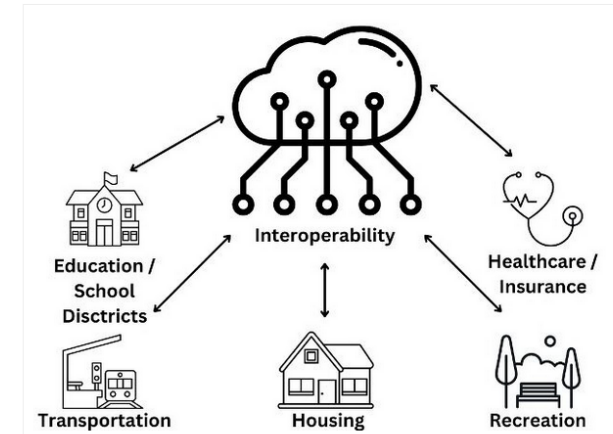
THE PROBLEM

The current national educational data infrastructure is found within multiple unconnected source systems that are not fully interoperable. District operational data is primarily used for complying with state reporting requirements and is aggregated by states for federal reporting. Further, there is limited data sets available which compare districts from one state to that of another.



THE SOLUTION

Researchers at the University of Tennessee have developed a dataset that contains quantitative information about every K-12 public education school district in the United States. This data set is customizable, updated annually, and allows for an easy comparison between different school districts even in different states.



PROPRIETARY SOFTWARE AND DATA

Software and Datasets are often more valuable when nobody else knows how to do it or has access to it.



- Great for a startup – may be an exclusive license
- Harder for competitors to copy
- Protected through confidentiality terms in contract and ©
- Not common in academia
- UTRF will not stop you from publishing

EXPRESS LICENSING



SEFM Application Suite

Simulated Electronic Fetal Monitoring Educational Platform



Interactive Learning

Hands-on practice with realistic EFM tracings



Competency Assessment

Evaluate skills with randomized test sessions



Progress Tracking

Monitor learning progress and performance



Interactive SEFM Learning

Access the full SEFM learning environment with interactive scenarios and guided practice.

 LAUNCH APP



Competency Assessment

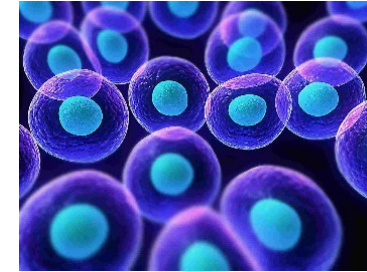
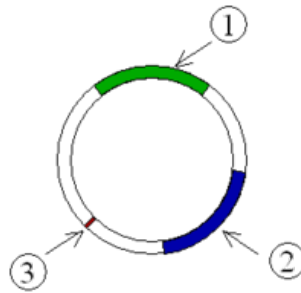
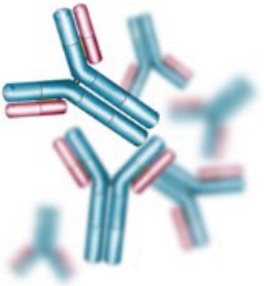
Test your skills with randomized assessment sessions featuring multiple questions.

 ASSESSMENT

- UTRF can do express licensing with click-through license from our website to other institutions and companies.
- Software, Datasets, Education Materials, STL files, Simulations, Models, etc.
- Can be linked to a page/app you manage
- Example: <https://utr.f.tennessee.edu/product-category/sefm/>

RESEARCH TOOLS

Any resource or material whose primary use is to enable scientific discoveries.



- Cell lines
- Antibodies
- Reagents & chemicals
- Plasmids
- Chemical probes
- Animal models
- STL & Simulations



No patent protection is necessary, but it cannot infringe on another's patent.

Non-exclusive license



Startup Resources at UTRF and UTK



UTRF STARTUP INITIATIVES

To start and grow sustainable startups throughout the UT ecosystem

\$5M Accelerate Fund

- Evergreen Fund for startups based on UT's IP
- Pre-seed/seed investments up to \$250K

Venture Launch Program

- Executives-in-Residence
- Entrepreneurial Fellows
- Mentors

Designed to ensure founders have team, traction, and funds for success

VENTURE LAUNCH PROGRAM

Executives-in-Residence work with founders and innovators at the early development stage to bring entrepreneurial and sector-specific knowledge and connections for opportunity assessment.



Bob Vanderhoff

The Entrepreneurial Fellow Program retains talented individuals in the region by pairing with executives-in-residence to work on tech startups.



Dr. Tanner Hobson

Designed to increase quality deal flow and match founders with successful entrepreneurs and leaders that have a domain experience

UTRF ENTREPRENEURIAL FELLOWS PROGRAM

- Completed school – Ph.D. or Masters
- Disclosure on file with UTRF
- One year program for technology maturation
- Monthly meetings with UTRF EIR and UTRF Leadership
- I-CORP and/or accelerator experience preferred.
- Up to \$60K in salary funding*
- Application process –reach out to Technology Manager



Dr. Tanner Hobson
UTRF Entrepreneurial Fellow

*must have \$ for research as well

ACCELERATE FUND

Investing in great ideas!

- Hold minority interest
- Investment up to \$250K, mostly as SAFEs or convertible note
- No management fees
- Nine-member Investment Advisory Committee consisting of investors, serial entrepreneurs, and industry leaders who make funding recommendations
- License to UTRF technology required



UTRF MATURATION GRANT

- Up to \$20K in direct costs
- Technology maturation focused
- Active technology disclosure
- Simple 4 question proposal
- Due by October 24, 2025 by 5pm
- [2025 UTRF Technology Maturation Grant – Call for Submissions](#)



UTK NSF I-CORP REGIONAL HUB

- Five Week Virtual Program
- Customer Discovery Focus
- Required for National Competition
- Applications by October 8, 2025 by 5pm
- 4-6pm every Wednesday – Oct 15 through Nov 15
- <https://partner.utk.edu/icorps/>
- Every Fall and Spring semester

recommended before CIF or UTRF Entrepreneurial Fellow application



UTK CHANCELLOR'S INNOVATION FUND

- Five \$50K awards for maturation of UT technologies to advance commercialization
- Requires technology disclosure on file with UTRF
- Applications Open Early Spring 2025 - [Link](#)
- Can be used with UTRF funding like the Entrepreneurial Fellow program



Dr. Aziz – 2024 Winner

Development and prototyping of superconducting processors.

He was a finalist in 2025 for smart pixel devices



Dr. Huang – 2024 Winner

Visualization as a Service. Lead to technology licensed to startup focused on healthcare claim reimbursements.



Dr. Swaminathan – 2025 Winner

Prototyping and development of AI driven LIFI battery-free sensors powered by ambient light. These devices can be used for On-Site IoT and secure factory data processing

ADDITIONAL RESOURCES



The EndoThumb



An Innovative Prosthetic to Restore Form, Function –
and for the first time, Feeling – for Thumb Amputees.

Senior Design Projects



GOT AN IDEA?



Fast



Secure



Easy to
track progress

- Share your idea with UT and UTRF via an invention disclosure.
- IDEA is the secure, online portal for invention disclosures at the University of Tennessee.
- It offers a fast, easy way to submit disclosures.



idea.tennessee.edu

UTRF DISCLOSURE GUIDANCE

This disclosure is the base document for federal invention reporting.

- External Funding - Use Federal Award #, not the UT internal #
- Contributors - List all contributors including non-UT. Non-UT persons are set to 0% and the percentage for UT persons must total 100%.
- Adequate description - at least one paragraph, especially for inventions.
- Public Disclosures - enabling information about this invention.
- Innovation Type - select correct category - Invention, Software, Dataset, Creative Works, Research Tool
 - If multiple types apply, put in a disclosure for each type!
 - The contributors and %'s may be different between innovation types.

** UTRF can see draft disclosures so please ask if you have questions!*

UTRF IP & REVENUE SHARING POLICY

Intellectual Property Policy: Inventions made by UT employees in the course of their duties or using UT resources and facilities are owned by UT and assigned to UTRF.

Revenue Sharing Policy

\$0 - \$5,000			
100% Inventors	0% Department	0% Campus	0% UTRF
\$5,000 - \$1M			
40% Inventors	15% Department	15% Campus	30% UTRF
\$1M+			
35% Inventors	20% Department	20% Campus	25% UTRF

Note: After the first \$5,000, distributions are made on net revenues remaining after legal fees have been deducted.



THANK YOU!

utrff.tennessee.edu

