TECHNOLOGY TRANSFER AT THE UNIVERSITY OF TENNESSEE: INVENTIONS AND COMMERCIALIZATION

Hot Topics in Research, May 23, 2017

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UTRF Vice President

What is "Technology Transfer"?

Moving inventions and discoveries from UTHSC to an external partner to create new products.

The GOAL is to find a suitable partner:

- *Strongly committed* to developing a product.
- Having the necessary *financial and personnel resources*.
- *Willing to pay* the university a fair price.

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So What?

Why does this matter to the University and Inventors?

- Innovative new products improve healthcare.
- Direct financial rewards to inventors and university.
- Access to funding, equipment, student training and employment opportunities.

➢ IP agreements are important components of strategic research alliances with industry partners.

What are the Commercialization Results?

In FY14 - FY16 (HSC only):

92 new **invention disclosures**

20 new **license** and option agreements

4 new **start-up companies**

$1,900,000 in license **revenues**

$700,000 distributed **to inventors**

$600,000 **invested** in patent pipeline

41 issued US **patents**

UTRF Services

Invention evaluation

Patents & Copyrights

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General IP support

Education

What is an Invention?

Therapeutics:
- Small Molecules
- Biologics (Peptide)
- DNA/RNA

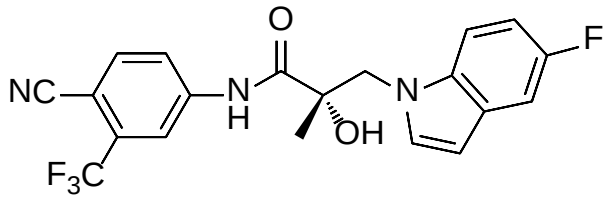
Drug Delivery Systems:
- Nanoparticles
- Biodegradable Polymers

Research Tools:
- Chemical probes/reagents
- Antibodies
- Cell lines

Medical devices:
- Surgical instruments
- Implants

Diagnostic tests:
- Biochemical markers
- Novel methods

Software:
- Medical Apps
- EHR tools



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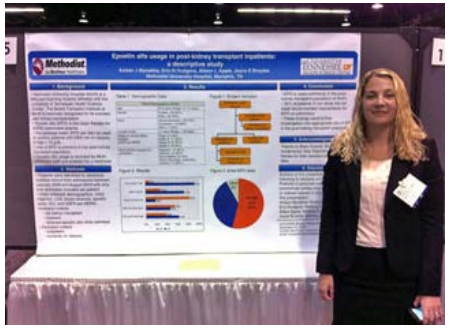
When to Contact UTRF

It is essential to protect your invention *before* it is presented to the public!

Contact UTRF:

- **ANYTIME!**
- Before publication in journal/thesis
- Before presenting at a conference
- When preparing a grant application



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WORKING WITH UTRF

Inventor

- Invention disclosure

I.D.E.A.
INVENTION DISCLOSURE
ENTERPRISE APPLICATION

https://idea.tennessee.edu

UTHSC

- Checks for conflicts
- Checks for sponsor's rights
- Assigns IP to UTRF

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- Evaluation & Go/No-Go
- Patent application
- Market technology
- Negotiate license
- Collect revenue
- Monitor licensee

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UTRF Evaluation Criteria

Technical Merit • **Maturity** of the invention? • What **data** is there on the invention? • Is the invention in a **"Hot"** area? • Is there a **prototype**? • **Breakthrough** or **incremental** change?	

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UTRF Evaluation Criteria

Technical Merit	**Patentability**
• Maturity of the invention? • What data is there on the invention? • Is the invention in a “Hot” area? • Is there a prototype? • Breakthrough or incremental change?	• **Novelty**: Prior public disclosures. • **Obviousness**: Is the invention obvious for an average professional in light of existing public knowledge? • **Subject Matter Eligibility**: Is it man-made?

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Commercial Potential • Is there a **clear product**? • Does it **solve** a significant **problem**? • What is the addressable **market size**? • What are **competitive technologies**? • Who are likely **licensees**? • What are legal and **regulatory** barriers?	

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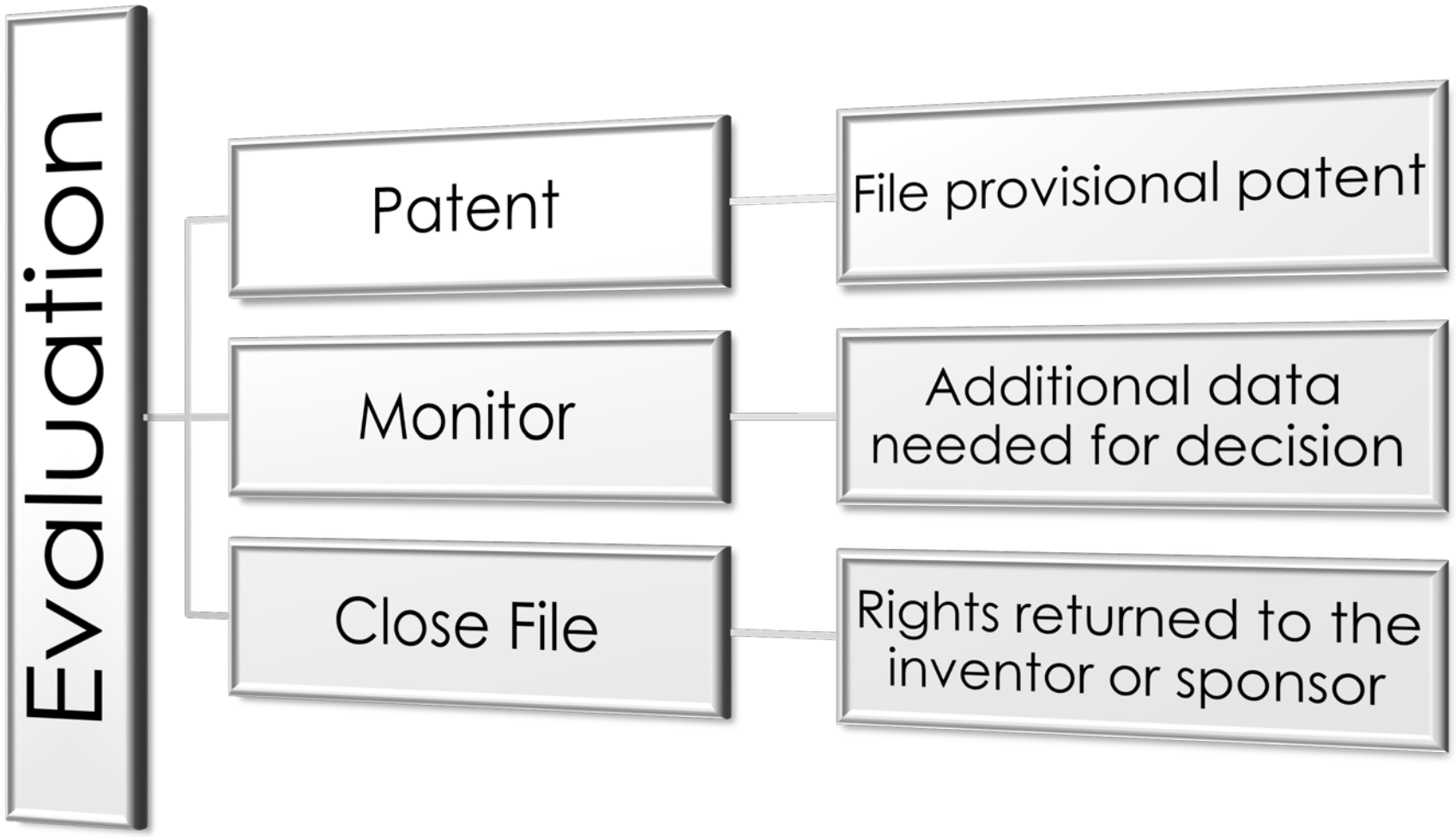
Technical Merit • Maturity of the invention? • What data is there on the invention? • Is the invention in a "Hot" area? • Is there a prototype? • Breakthrough or incremental change?	Patentability • Novelty: Prior public disclosures. • Obviousness: Is the invention obvious for an average professional in light of existing public knowledge? • Subject Matter / Eligibility: Is it man-made?
Commercial Potential • Is there a clear product? • Does it solve a significant problem? • What is the addressable market size? • What are competitive technologies? • Who are likely licensees? • What are legal and regulatory barriers?	**Inventor** • What **future plans** does the inventor have with the technology? • **Funding** status for further research? • What **industry relationships** does the inventor have? • Existing relationship with **UTRF**.

Crossroads: What Happens After the Evaluation?



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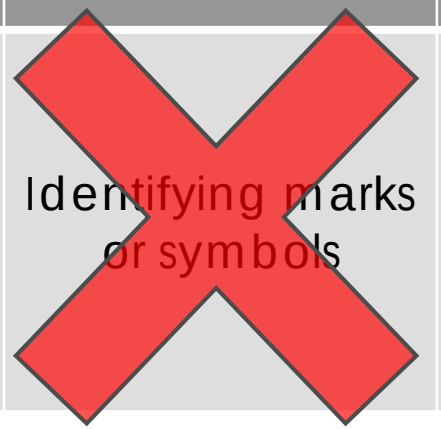
TYPES OF INTELLECTUAL PROPERTY

PATENTS	COPYRIGHT	TRADEMARK	TRADE SECRETS
Products and processes	Original works of authorship	Identifying marks or symbols	Business secrets



What is patentable Subject Matter?

<u>New</u>, <u>useful</u>, and <u>nonobvious</u>:

- Process
- Machine
- Manufacture
- Composition of matter
- Improvements to above

- Laws of nature
  - Genomic biomarkers
- Physical phenomena
- Natural compositions
  - gDNA, mRNA, plants, animals
- Abstract ideas
- Mathematical equations
- Business methods

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Teaming for Success

Inventor participation is critical for successful licensing.

The inventor is the single most important source of valuable commercialization leads.

The inventor is the expert.

- The first thing that companies want to do is to talk to the inventor(s).

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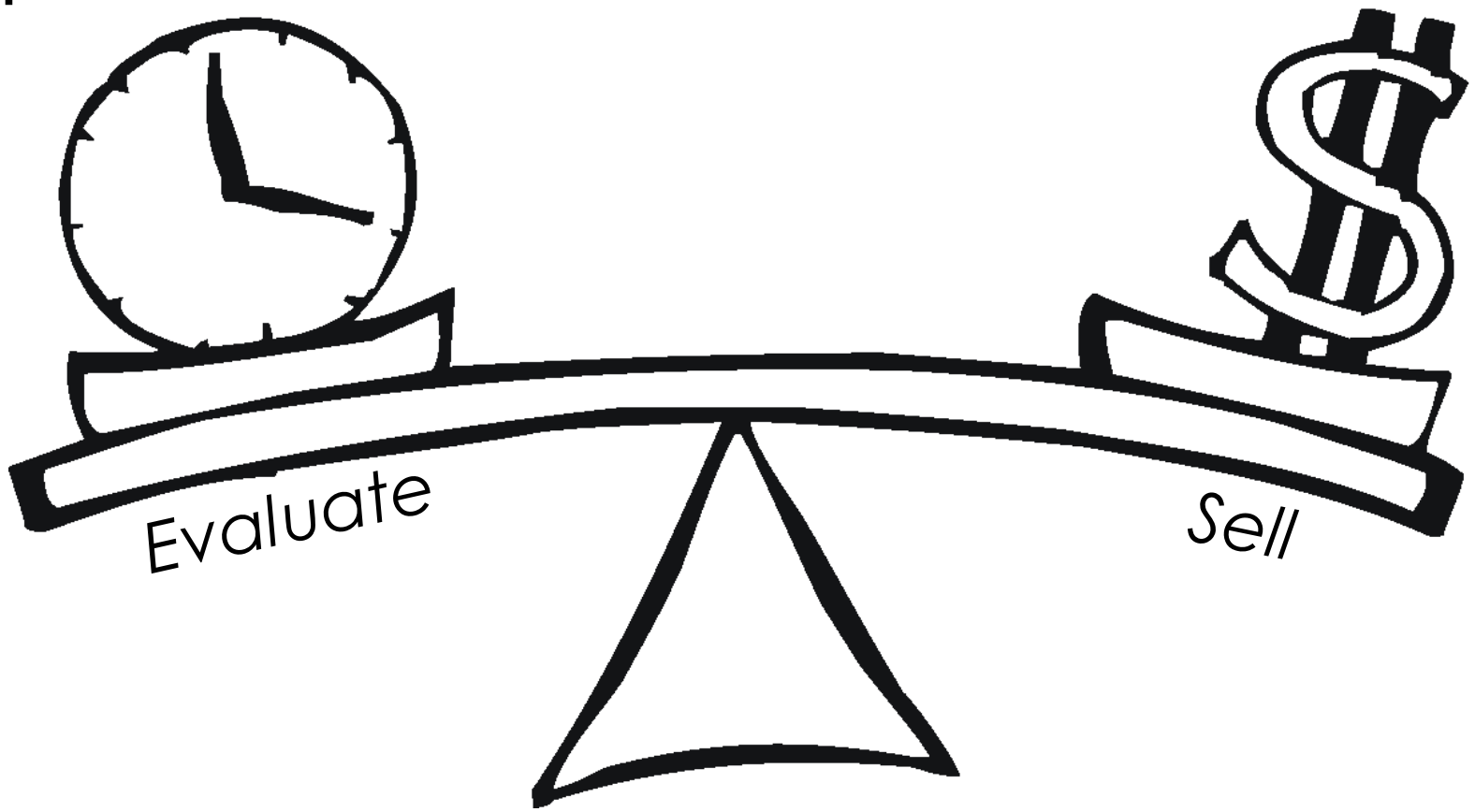
Two Main Types of Agreements

Option

License



Option Agreement

Objective: Give a company time to evaluate a new technology

Key Issues: What technology?

How long do they get to evaluate?

How much do they have to pay?

What do they have to report back?

Is a deal stated, or just a right to negotiate?

LICENSE AGREEMENT

Objective: Provide the right to sell products based on a UTHSC invention

Key Issues:

- Define IP being licensed
  - Exclusive or Non-Exclusive?
  - Reserved rights
  - Improvements
- Financial Consideration
- Diligence Milestones
- Patent prosecution/defense
- Indemnification
- Term

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UT Royalty Sharing

UTRF covers all expenses - patents, legal fees, marketing

Revenue Sharing Distribution

Revenue	Inventor	Campus	Department	UTRF
1st $5000	100%	0%	0%	0%
***$5k-$1M**	40%	15%	15%	30%
***$1M+**	35%	20%	20%	25%

* The inventor receives 100% of the first $5000 of gross revenue, but all other distributions refer to net revenue (i.e., after IP costs are subtracted).

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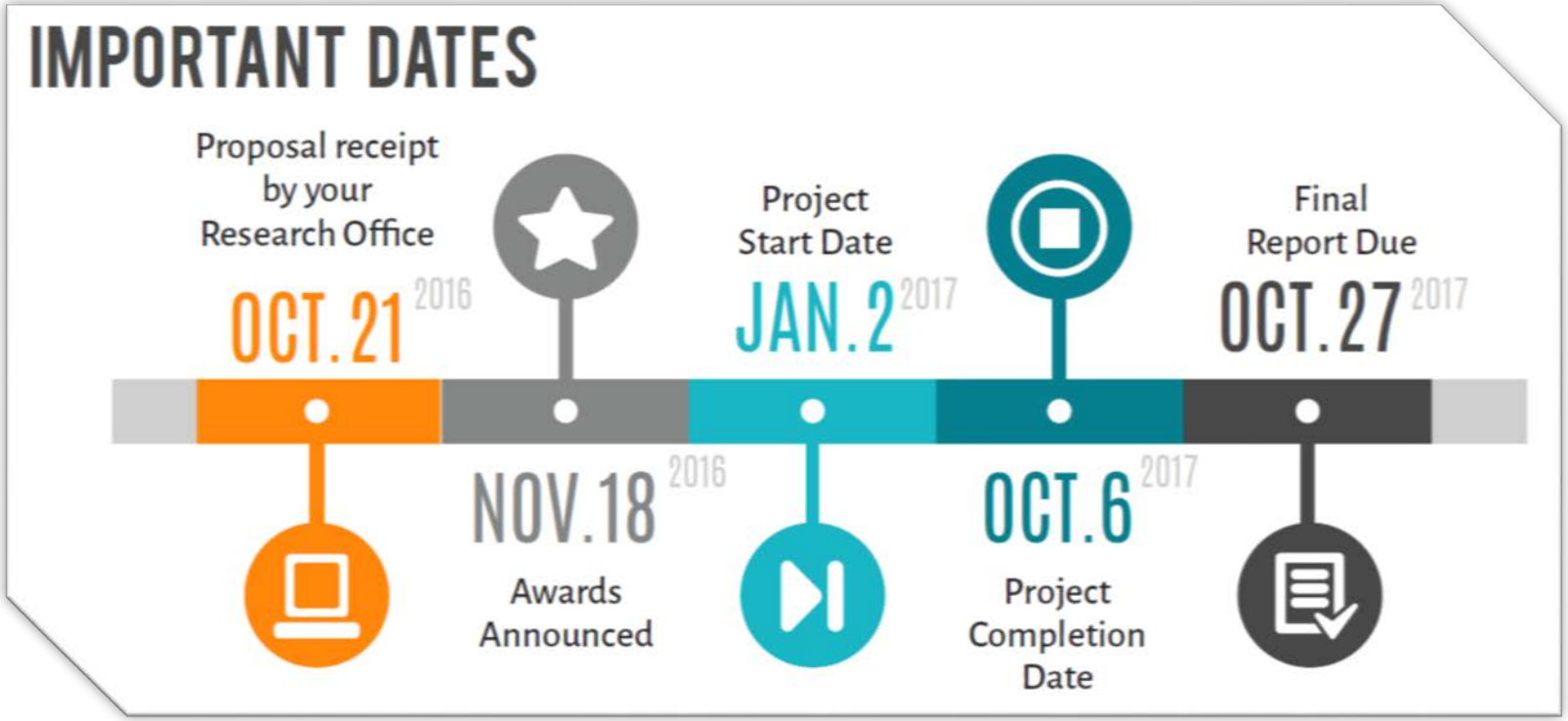
MATURATION GRANT FUNDING

A grant program providing up to $15,000 to develop technologies with commercial potential



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SUPPORTING THE CAMPUS

UTRF provides IP support to the Office of Research and UTHSC

Industry Sponsored Research

Confidentiality Agreements

Federal and Philanthropic Grants

Material Transfer Agreements

Federal Invention Reporting

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New Program – Entrepreneur In Residence

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ENTREPRENEUR-IN-RESIDENCE

Funded by the US Department of Commerce under an
i6 Challenge grant from the Economic Development Administration

Entrepreneur is Residence is a new resource available to all UTHSC faculty, staff, and students:

- Review current research focus and commercial market fit
- Examine the startup potential of your ideas and IP
- No cost to researchers to meet with EIR

Initial EIR is an executive with sales/marketing experience in Pharma.

More details will be announced very shortly!

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EDUCATION

For Everyone:

Recent Topics

- IP and Tech Transfer basics
- CRISPR litigation update
- FDA process
- "Ask an Entrepreneur" Startup panel
- Patenting Biomarkers and Genes

Tech Talks held 12PM on last Thursday of the month, except summer.

For Students/Postdocs:

- PHAC-832 – Business & Entrepreneurship for Scientists (2 credits, Spring semester)

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A Track Record of Success at UTHSC!

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