TECHNOLOGY TRANSFER AT THE UNIVERSITY OF TENNESSEE: INVENTIONS AND COMMERCIALIZATION

Hot Topics in Research, May 23, 2017

Richard Magid, PhD
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.
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

Technology marketing

License negotiation

Royalty collection & distribution

Maturation funding

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
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
WORKING WITH UTRF

Inventor
• Invention disclosure

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

https://idea.tennessee.edu

UT HSC
• Checks for conflicts
• Checks for sponsor’s rights
• Assigns IP to UTRF

UT RESEARCH FOUNDATION
• Evaluation & Go/No-Go
• Patent application
• Market technology
• Negotiate license
• Collect revenue
• Monitor licensee
UTRF EVALUATION CRITERIA

<table>
<thead>
<tr>
<th>Technical Merit</th>
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TABLE: UTRF Evaluation Criteria

- **Technical Merit**
  - Maturity of the invention?
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  - Is there a prototype?
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## UTRF Evaluation Criteria

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**UTRF Foundation**

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### Commercial Potential

<p>| • Is there a <strong>clear product</strong>? |
| • Does it <strong>solve</strong> a significant <strong>problem</strong>? |
| • What is the <strong>addressable market size</strong>? |
| • What are <strong>competitive technologies</strong>? |
| • Who are likely <strong>licensees</strong>? |
| • What are legal and <strong>regulatory</strong> barriers? |</p>
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<th>Commercial Potential</th>
<th>Inventor</th>
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<td>Is there a clear product?</td>
<td>What <strong>future plans</strong> does the inventor have with the technology?</td>
</tr>
<tr>
<td>Does it solve a significant problem?</td>
<td><strong>Funding</strong> status for further research?</td>
</tr>
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<td>What is the addressable market size?</td>
<td>What <strong>industry relationships</strong> does the inventor have?</td>
</tr>
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<td>What are competitive technologies?</td>
<td>Existing relationship with <strong>UTRF</strong>.</td>
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CROSSROADS: WHAT HAPPENS AFTER THE EVALUATION?

Evaluation

- Patent: File provisional patent
- Monitor: Additional data needed for decision
- Close File: Rights returned to the inventor or sponsor
UTRF SERVICES

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Patents & Copyrights

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# Types of Intellectual Property

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<tr>
<th>PATENTS</th>
<th>COPYRIGHT</th>
<th>TRADEMARK</th>
<th>TRADE SECRETS</th>
</tr>
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<tr>
<td>Products and processes</td>
<td>Original works of authorship</td>
<td>Identifying marks or symbols</td>
<td>Business secrets</td>
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![Diagram showing the types of intellectual property and their examples.](image-url)
**What is patentable subject matter?**

**New, useful, and nonobvious:**
- 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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Patents & Copyrights
Technology marketing
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Education
TWO MAIN TYPES OF AGREEMENTS

Option License

Evaluate Sell
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

<table>
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<tr>
<th>Revenue</th>
<th>Inventor</th>
<th>Campus</th>
<th>Department</th>
<th>UTRF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st $5000</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>*$5k-$1M</td>
<td>40%</td>
<td>15%</td>
<td>15%</td>
<td>30%</td>
</tr>
<tr>
<td>*$1M+</td>
<td>35%</td>
<td>20%</td>
<td>20%</td>
<td>25%</td>
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* 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).
UTRF Services

- Invention evaluation
- Patents & Copyrights
- Technology marketing
- License negotiation
- Royalty collection & distribution
- Maturation funding
- General IP support
- Education
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
UTRF Services

- Invention evaluation
- Patents & Copyrights
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- License negotiation
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NEW PROGRAM – ENTREPRENEUR IN RESIDENCE

Entrepreneur in 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!
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)
A Track Record of Success at UTHSC!
UTRF Contacts

Richard Magid, Ph.D.
ma gid1@uthsc.edu
901-448-1562
(General matters, entrepreneurship, and medical devices)

Lakita Cavin, J.D., Ph.D.
lcavin@uthsc.edu
901-448-7825
(Legal matters and biological technologies)

Stefan Schweizer, Ph.D.
sschwei1@uthsc.edu
901-448-1146
(Chemical and pharmaceutical technologies)

Delira Robbins, Ph.D.
drobbin6@uthsc.edu
901-448-2181
(Biological technologies)

Office: 910 Madison, Suite 827
http://utrf.tennessee.edu