



Technology **TRANSFER**

THE UNIVERSITY OF
MEMPHIS.



Intellectual Property Fundamentals And a Story... University of Memphis April 24, 2014

Introduction

What is Intellectual Property?

How do I know if I'm inventing something?

Who owns my invention?

What is disclosure?

Why do I need to disclose my invention?

And whatever else you want to ask...

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

Dr. Sara Smith and her grad
student Sanjay Gupta

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Our story...

NSF grant

results are pretty interesting.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Our story...

*new polymer that should make
tires shinier*



Makes cars more visible at night

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS



Our story...

publish on-line two weeks from today

Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Our story...

I haven't gotten around to telling you

Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Our story...

*everyone tells me we
have a year to file a patent application*

*Technology
TRANSFER*

THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Our story...

University of Illinois collaborator

*Technology
TRANSFER*

THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Our story...

*collaborator at Illinois
is great at one of the assays*

*Technology
TRANSFER*



THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Our story...

What do I need to do?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY

THE UNIVERSITY OF
MEMPHIS



Lesson 1

We don't have that year
that everyone talks about

Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Lesson 1



Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

*I have time between
classes tomorrow morning.*

Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Our story...

I'll send our standard
invention disclosure form.

Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Our story...

but we can talk about it tomorrow.

Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Our story...

modified an existing compound

Didn't think it would work...

*Technology
TRANSFER*



THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Our story...

Really surprising

*Technology
TRANSFER*

THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Our story...

*I have to be able to keep doing research
in this area...*

*Technology
TRANSFER*

THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



A longer lesson: What is Intellectual Property?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



What is Intellectual Property?

Property rights that protect
creations of the Mind

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Types of Intellectual Property

Patents

Copyright

Trademark

Trade Secret



Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Patents

Government granted property right

Right to exclude others

Expires 20 years from filing



Country - Specific

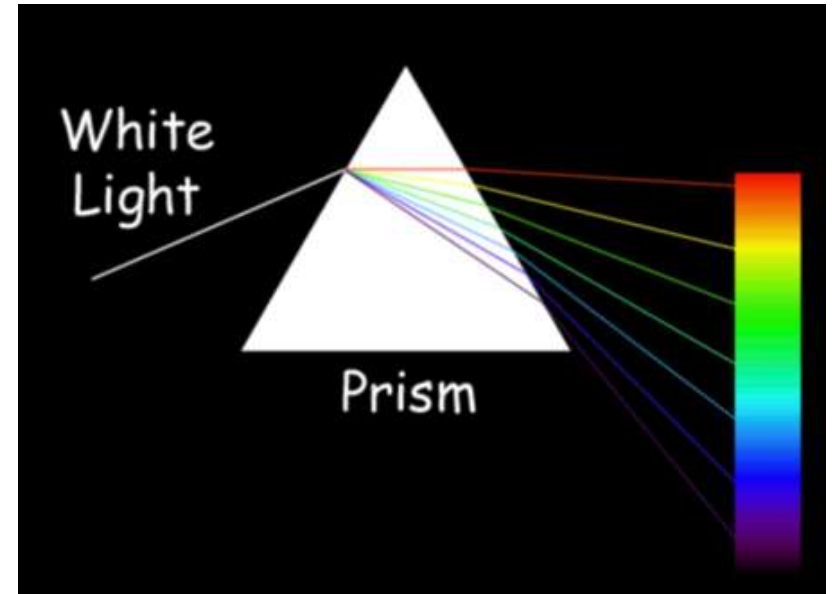
Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Some new knowledge has intrinsic value

$$F=MA$$



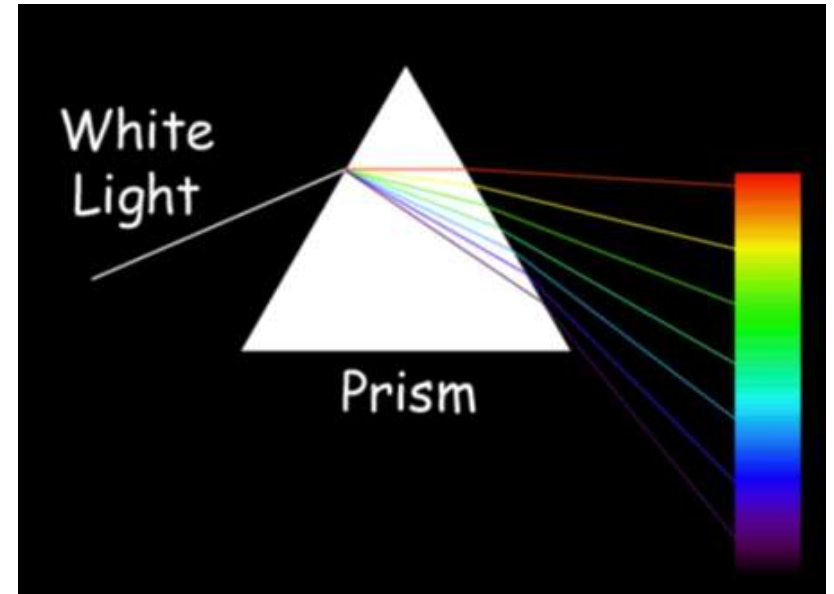
Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



And can't be patented

$F=MA$



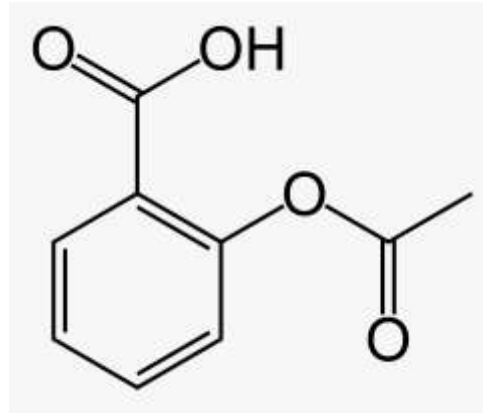
*Technology
TRANSFER*

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



And some can be



Aspirin, patented from 1900 - 1917

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



For some, the Supreme Court will tell us...

Software and Business Methods

Alice Corp vs CLS Bank

Technology
TRANSFER



Patent Requirements

Novelty

Usefulness

Non-Obviousness

Enablement

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Novelty

Was the invention known or published or used anywhere?

ONLY the U.S. has a 1 year grace period on publication (Repeat of Lesson 1)

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Usefulness

Does it has a specific and credible utility?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Non-Obvious

To a person who knows the field (“Skilled in the Art”)

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Non-Obvious

The most difficult to anticipate.

Proxy questions:

Creative?

Contrary to the literature?

Student thought it would work, but
Professor laughed / frowned?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Enabled

Can someone use the invention based on the written description?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Shiny Tire Polymer

Novel?

Publication is still 2 weeks away

No direct hits on preliminary structure search

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Shiny Tire Polymer

- Useful?

Shiny Tires!

More seriously: Safer cars.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Shiny Tire Polymer

Non-Obvious?

“The chemical modification usually disrupt structure and so should not make things reflect light in a planar way.”

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Shiny Tire Polymer

Enabled?

Makes a substitute tire material shiny

But,

Would it work at scale in real tires?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Shiny Tire Polymer: Patentable?

Novelty?--potentially

Usefulness? -- Yes

Non-Obviousness? - ? But some reasons to think so

Enabled? -- Preliminary

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Shiny Tire Polymer Patent

BUT,

Would it be enforceable?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Shiny Tire Polymer Patent

BUT,

Would it be enforceable?

Smoking gun: New chemical structure would be found in tires

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Shiny Tire Method Patent

Would it be enforceable?

Much harder.

No smoking gun (no new polymer)

Can't know what happens inside BigCo.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Maintaining Patentability

- **Public disclosure can include:**
 - Publication in open literature
 - Poster sessions and abstracts (postings to the web)
 - Presentations to an open forum (thesis defense)
 - Personal communications without a confidentiality agreement
 - Catalogues and libraries

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

Would it be less expensive to copyright the formula for the polymer?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Copyright

Government granted right

Exclude others from Copying

Expires 70 years after authors' death

Granted on completion of work



Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

Copyright would not provide protection here.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



The Story...

This seems like a lot of work.

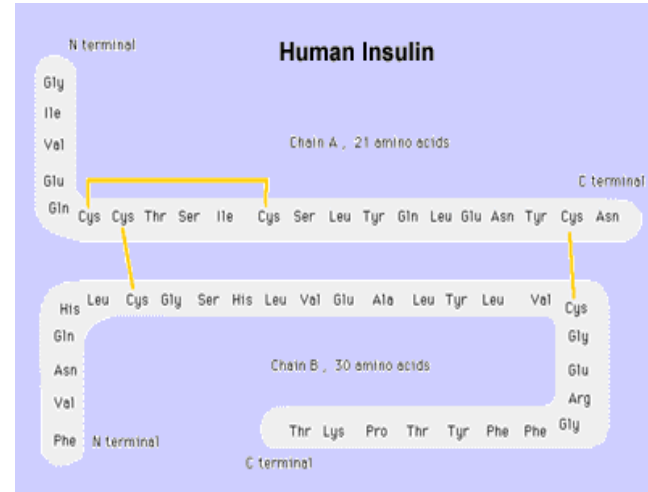
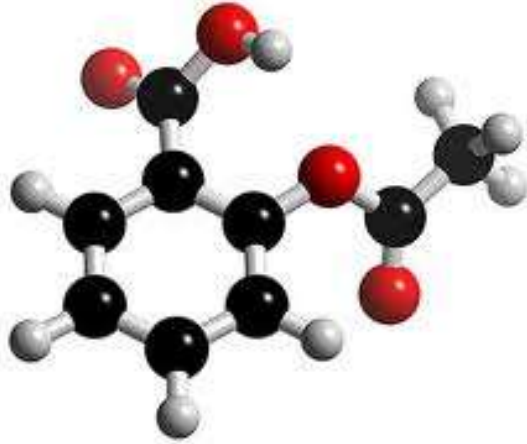
Why should I disclose this to the university?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Some new knowledge needs investment



Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS



But, without



No



Exclusivity

Investing in Product Dev.

Technology TRANSFER



THE UNIVERSITY OF
MEMPHIS.



Before 1980

“We found 28,000 government funded inventions gathering dust on agency shelves...

Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

Before 1980

...with not a single drug commercialized when the government owned the patent.”—
Sen. Birch Bayh

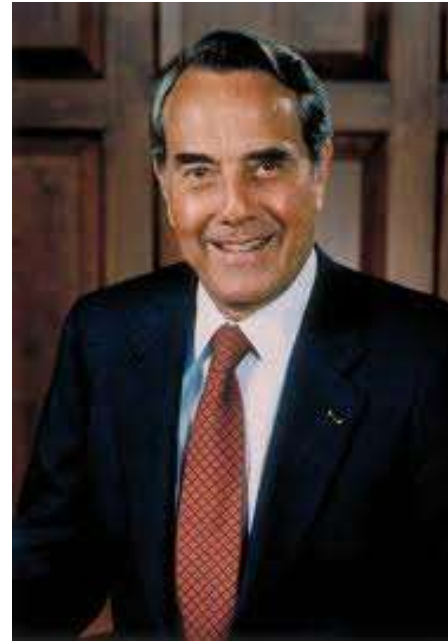
Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS

The Bayh-Dole Act (P.L. 96-517, 1980)



Technology
TRANSFER



THE UNIVERSITY OF
MEMPHIS.



Allowed Universities to offer



Exclusivity

Technology TRANSFER

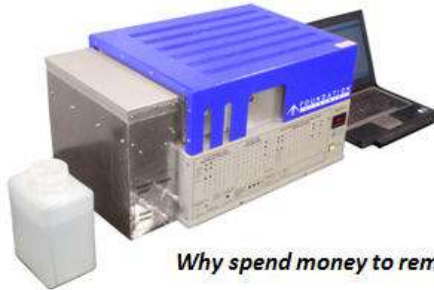
THE UNIVERSITY OF
MEMPHIS



The right to own federally funded IP and license it exclusively has resulted in many new products from university research...

The THM Rapid Response System

Fully Automated On-line Process Monitoring for THMs



- Patented sample introduction process
- Easily switch between on-line and grab samples
- No Reagents, hazardous or otherwise
- Uses inexpensive nitrogen, not helium
- Optimize your treatment on THMs, not TOC:

Why spend money to remove organics that do not become THMs?

Technology TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Bayh-Dole Act

Universities may own technologies funded by Federal agencies

Gave industry a mechanism to generate return on investment for developing and marketing university technologies

Technology
TRANSFER



Bayh-Dole Act

Academic research is critical to the nation's economic competitiveness

Strong incentive for industry-university research collaborations and industrial investment

Technology
TRANSFER



Benefits of Technology Transfer

Encourages industrial partnerships

Path to rewarding jobs for graduate students

Royalty income (shared with inventors)

Bring your discoveries to market

Technology
TRANSFER



From Lab to Market

Further development/testing

Commercial partner with \$\$\$

Protected intellectual property & effective technology transfer services

Technology
TRANSFER



Let's Talk about some:



Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



So, you have an idea, a new discovery
Now What?

Call Kevin Boggs, X1712
kpboggs@memphis.edu

Or Tammy Alexander X1589
tlxander@memphis.edu

Technology
TRANSFER



U of M owns your invention if it was:

Developed in the course of a project sponsored by U of M,
or,

Developed with the significant use of U of M 's facilities,
services, or equipment, or,

Developed in the course of a project arranged,
administered or controlled by the U of M and sponsored by
organizations external to U of M

<http://policies.memphis.edu/UM1607.htm>

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

The invention was made with federal funds and with U of M facilities. Sanjay Gupta was a paid GA.

But, what about University of Illinois?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

University of Illinois researcher provided only data.

They are probably not inventors.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



What/When to Disclose

WHAT: Disclose novel ideas, discoveries, inventions, materials that are timely and useful to the marketplace.

WHEN: Disclose with sufficient notice before any publication (*prior to submission if possible*) or enabling public disclosure.

Don't know if you should disclose? ***Please call us.***

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.

FedEx
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Disclosing an Invention

Request an invention disclosure form from Tammy.

On the form, describe in detail the different aspects of your invention.

Submitting the form initiates your interaction with OTT, but does not provide patent protection.

- **Invention Disclosure Submission \neq Patent Filing**

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Disclosing an Invention

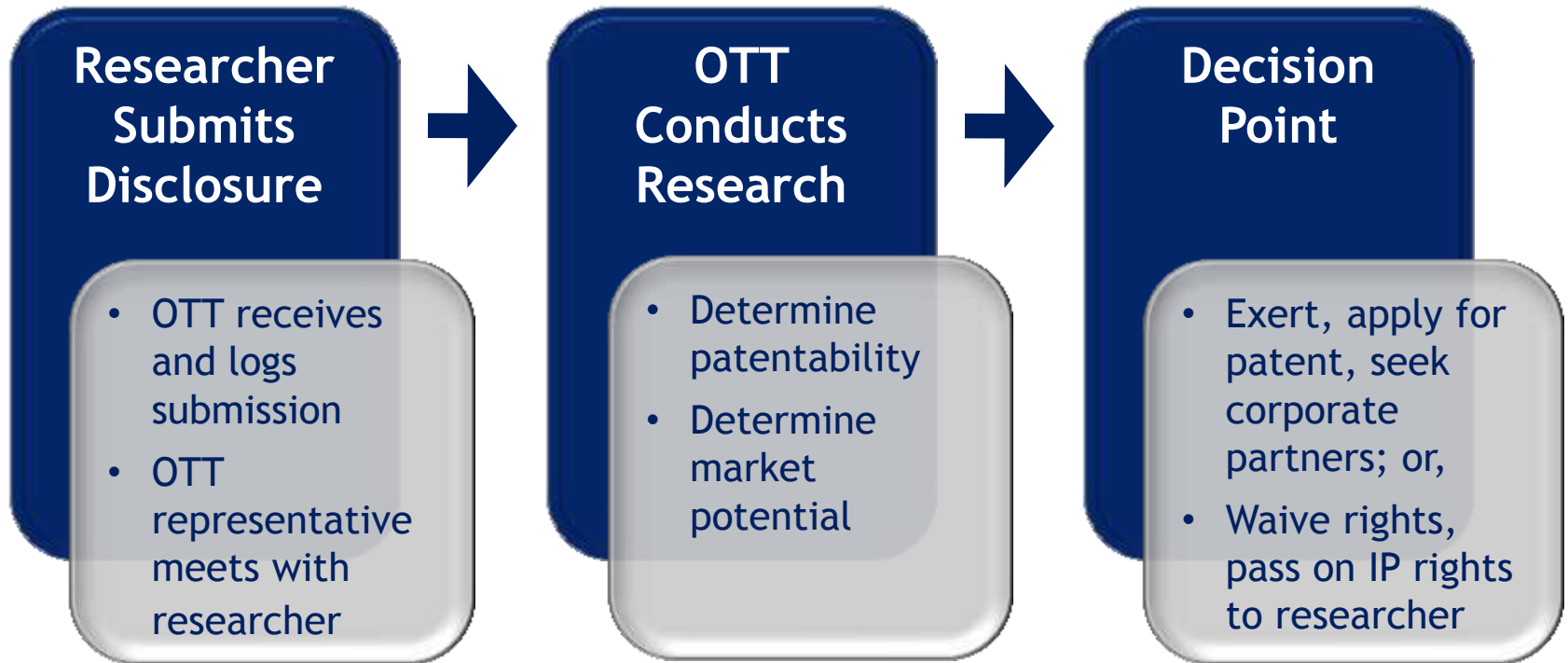
Review of invention disclosure form: Tammy Alexander

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



The U of M Process: Disclosing your idea



*Technology
TRANSFER*

THE UNIVERSITY OF
MEMPHIS.

FedEx.
INSTITUTE OF
TECHNOLOGY
THE UNIVERSITY OF
MEMPHIS



Licensing and revenue distribution

Identify
Commercial
Partner and
Agree on
License
Agreement

Monitor
Product
Development

Distribute
Royalties

At least 40% of net
revenue to
inventors

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Patent Application Process

Patent attorney with expertise in industrial polymers writes a draft.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Patent Application Process

Sara and Sanjay review, answer questions, and edit as needed.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Patent Application Process

Patent attorney files the application.

We can start marketing it.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



How We Market Technologies

- Promotional materials for individual technologies
- Contacts with local and international businesses and entrepreneurs (including yours!)
- Technology Showcases and Expos

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

Promotional materials for individual technologies

A tire additive that makes tires more visible and cars safer!

Can be added to existing mfg. process

Several levels of reflection can be offered.

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Our story...

Goodyear is interested!

A key first question: will they develop and sell it, or do they want to keep it from competing?

Technology
TRANSFER

THE UNIVERSITY OF
MEMPHIS.





Technology TRANSFER

THE UNIVERSITY OF
MEMPHIS.



Thank you

Kevin Boggs

X1712

kpboggs@memphis.edu

Tammy Alexander

X1589

tlxander@memphis.edu