

Managing Intellectual Property Issues (Patents/Entrepreneurialism)

Think Big!

Create a strategy

Build a supply chain

Get it funded

Team Up

Get it out there!

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Purpose of University Research

- Research and technology have been the primary drivers of economic growth and development
- Technology-led economic development has “clustered” around and been driven by major research universities through effective partnerships , i.e:
 - Stanford University and the University of California, Silicon Valley
 - MIT and Harvard, Boston Biotech Corridor
 - Duke and the University of North Carolina, Research Triangle
- Attracts businesses interested in
 - Partnering with university scientists
 - Recruiting an educated workforce
 - Generating start-ups and spin-offs
 - Creating high-paying, skilled jobs in private and public sector
 - Produces income for the university through commercialization and technology transfer

“New Roles” in Higher Education

Faculty roles

- **Teaching** UG and G students to be the next generation of innovators
- **Research** to promote creation of new knowledge, to develop technology that will benefit society.

Commercialization/Publication – Knowledge Dissemination for public good in order to be an engine of economic development for the region, state and the nation.

- **Service** – create jobs

How to start?

How to foster innovation/entrepreneurial mindset?

- Educate and train students (i.e. commodity vs. innovative)
Entrepreneurship Boot Camps, projects, internships, competitions....
Create experiences that will help unlock the inner entrepreneur in students, faculty and the public (i.e. Exploravision competition, eCyberMission,....). Goal: ***teach/expose our students into a forward-thinking process***

How to foster technology based entrepreneurial activity?

- Recruit-support existing faculty who will bring in funding for research or other activities that lead to new discoveries or high-impact innovations
- Campus wide initiative

Strengths/Weaknesses

Components:

- Location (i.e. south Texas is “advanced manufacturing”)
- Research expertise
- Workforce
- Venture Capital
- Entrepreneurship

Involvement of the Institution towards IP and Entrepreneurial Activity

- Patents now count for Tenure and Promotion
- Market analysis and licensing
- “Foster” faculty startups and technology incubators to promote technology investment by companies locating/relocating to the area and partnering with University faculty and students
- Federal agencies are offering grants towards these activities (*evolving to venture funding/commercialization*)

Resources related to Rewards

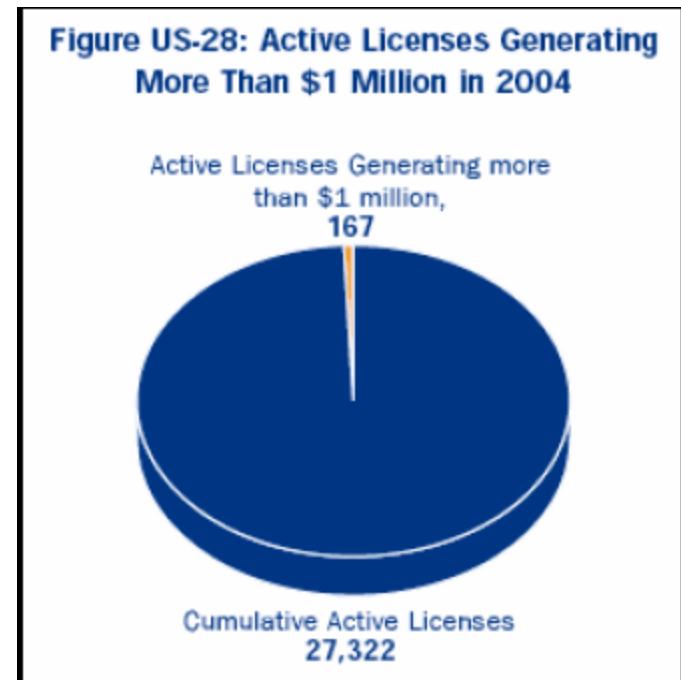
Total Direct Expenses for Activities Conducted Under Technology Transfer, FY 2010				
Institution	Personnel	Facilities, Rent	Unreimbursed Legal Expenses	
			Patent Prosecution	Other
University of Texas System				
UT at Arlington	\$162,823	\$0	\$235,041	\$21,347
UT at Austin	\$1,959,262	\$9,072	\$810,506	\$163,113
UT at Dallas	\$290,000	\$0	\$193,687	\$0
UT at El Paso	\$234,819	\$0	\$154,656	\$0
UT-Pan American	\$100,000	\$0	\$50,114	\$33,332
UT at San Antonio	\$0	\$0	\$118,228	\$0
UT at Tyler	\$22,542	\$0	\$0	\$0
UT Southwestern Medical Center	\$2,158,786	\$0	\$527,253	\$0
UTMB at Galveston	\$422,586	\$0	\$436,805	\$0
UTHSC at Houston	\$786,297	\$0	\$248,080	\$20,969
UTHSC at San Antonio	\$923,060	\$79,162	\$336,340	\$0
UT M.D. Anderson Cancer	\$1,671,696	\$0	\$268,419	\$0



Why Transfer Technology?

- Generate licensing revenue and research funding
- Dissemination of new knowledge for the benefit of society
- Development of technology into new products
- Provide avenue for faculty members to interact with business
- Stimulate economic development
- Generate favorable publicity

0.6 % of active licenses generated more than \$1M



How do you decide what to patent?

Advantages/Disadvantages

- **What is patentable? (satisfy novel, utility and non-obviousness clauses)**

Process: improvement on existing systems, a combination of old systems in a novel manner, or a new use of a known process.

Machine: An apparatus that performs a function and produces a definite result or effect.

Manufactured product: An produced article that has a usefulness.

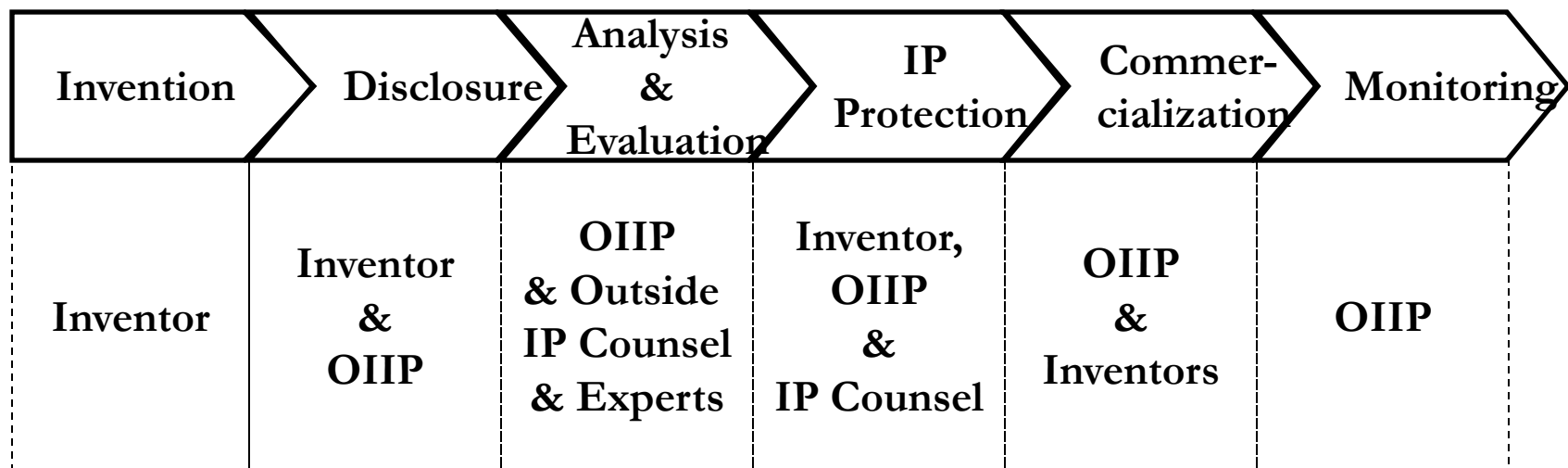
Compositions of matter: Chemical compounds (i.e. drugs) and living matter

https://www.cusys.edu/techtransfer/investigators/faq_patent.html#publish

- **Patenting issues: Publications, Time, Costs**

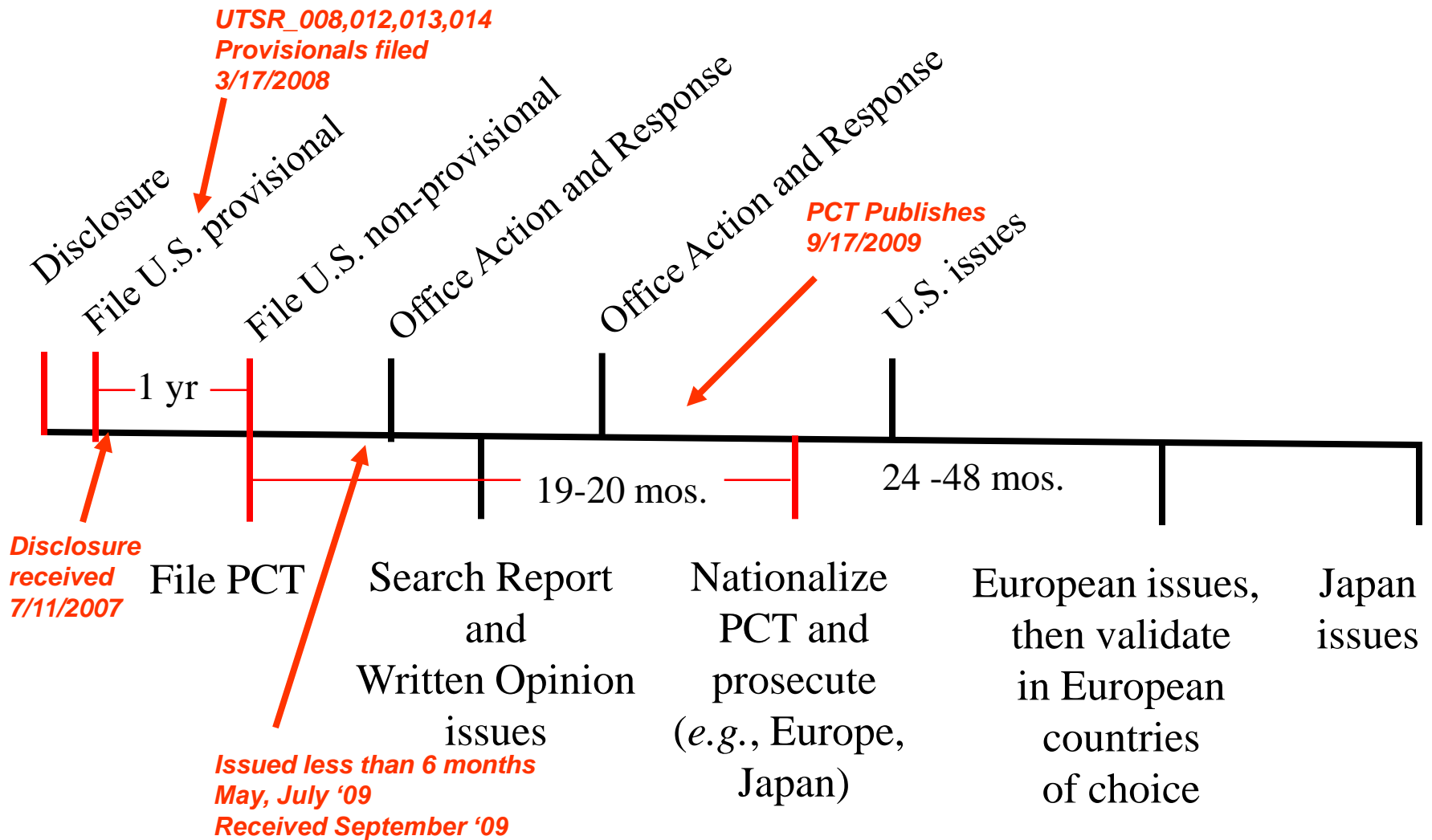
Path to patenting

The Process



The Players

Forcespinning IP



What after????

- Licensing (Royalties)
- Spinning a company: Excellent Inventor ≠ Excellent Entrepreneur

- Spinning a company, and ???
 - **CEO**, CTO, no involvement, time commitment

 - Knowledge resources—attorneys, accountants and technology/business consultants (i.e. exclusive, non-exclusive, royalties Upfront fee, maintenance fees/ minimum annual royalty)

 - Access to outside resources through EDCs, technology incubators; patent protection

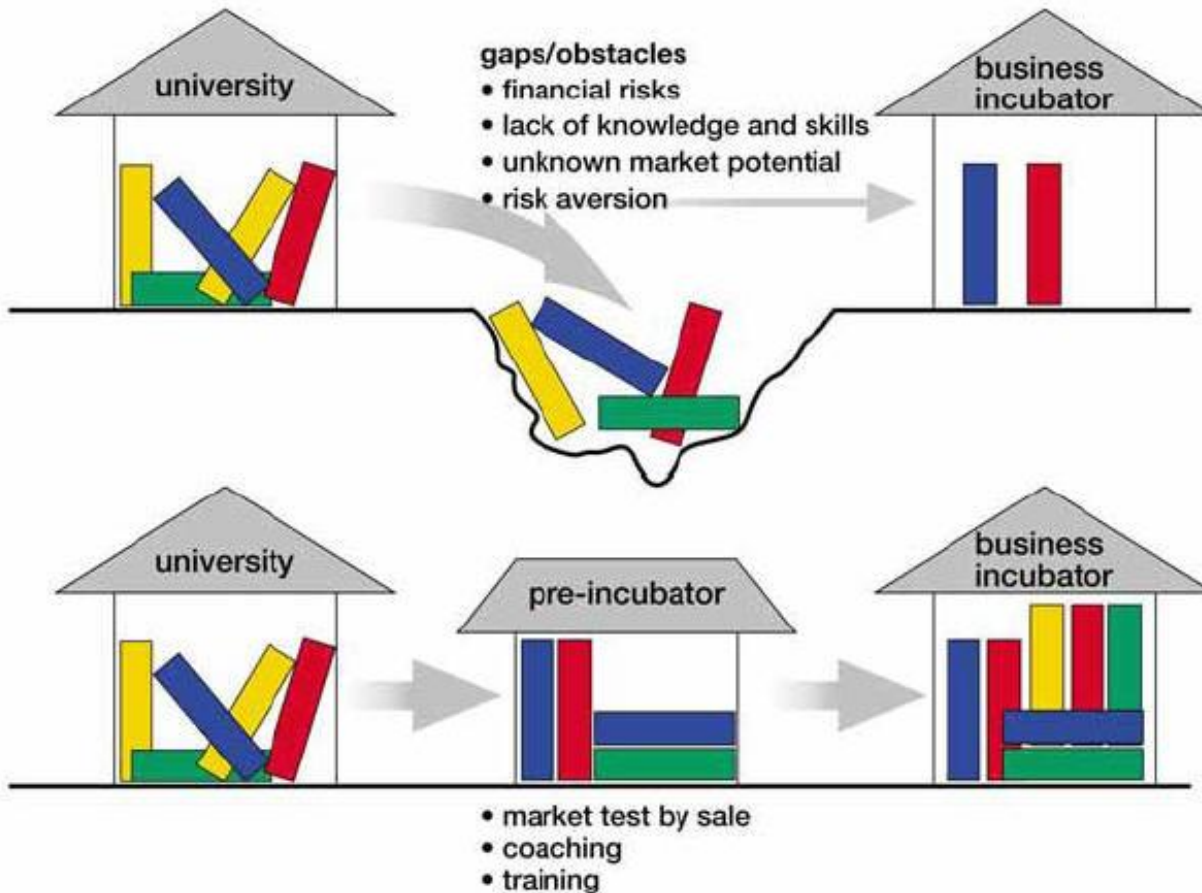
 - Ability to generate interest from investors

 - Management Team

Is it worth it to actively participate as CEO of the company?

- “ We need a bullheaded yet friendly individual for a highly repetitive and completely thankless job. They should be willing to take extreme pressure from both sides of a negotiation, accept terms that make no sense as political presses require, and fully accept blame for all unfavorable outcomes from such decisions. Now the salary would be commensurate with low-level administrative positions which require none of these skills. Interested?”

Pre-incubation Model for Academic Inventions



- Coaching/Training Faculty inventors with technology-based business ideas
- Continuous focus on moving inventions forward from the laboratory to the creation of their own company.
- Risk Reduction
- Identification of funding
- Finding Entrepreneurial CEOs
- Grow Expertise

Status at our universities

- ▶ Policies:
 - ▶ Enable and foster or impede technology commercialization?

- ▶ Philosophies, Goals:
 - ▶ Does the University Administration endorse, encourage, & actively support ?

 - ▶ How is commercialization viewed by university researchers?

 - ▶ What is the governing philosophy/behavior?
 - ▶ “Protectionistic”, Bureaucratic, Process-oriented, Policy-driven, Arrogant, vs. Collaborative, Service-oriented, User-friendly, and Flexible

 - ▶ How much improvement is possible, given current university environment?

- ▶ Resources/ Admin. Commitment
 - ▶ Personnel: Who’s in place; who’s needed. (e.g., start-up experience, market orientation, collaborative)?
 - ▶ Capital, Facilities, Collaborators, Partners, etc.

PREM successes in the area

Patent submission:

- UTSA

- *Development of a new medical imaging technology based on Probe Beam Deflection for optoacoustic detection”

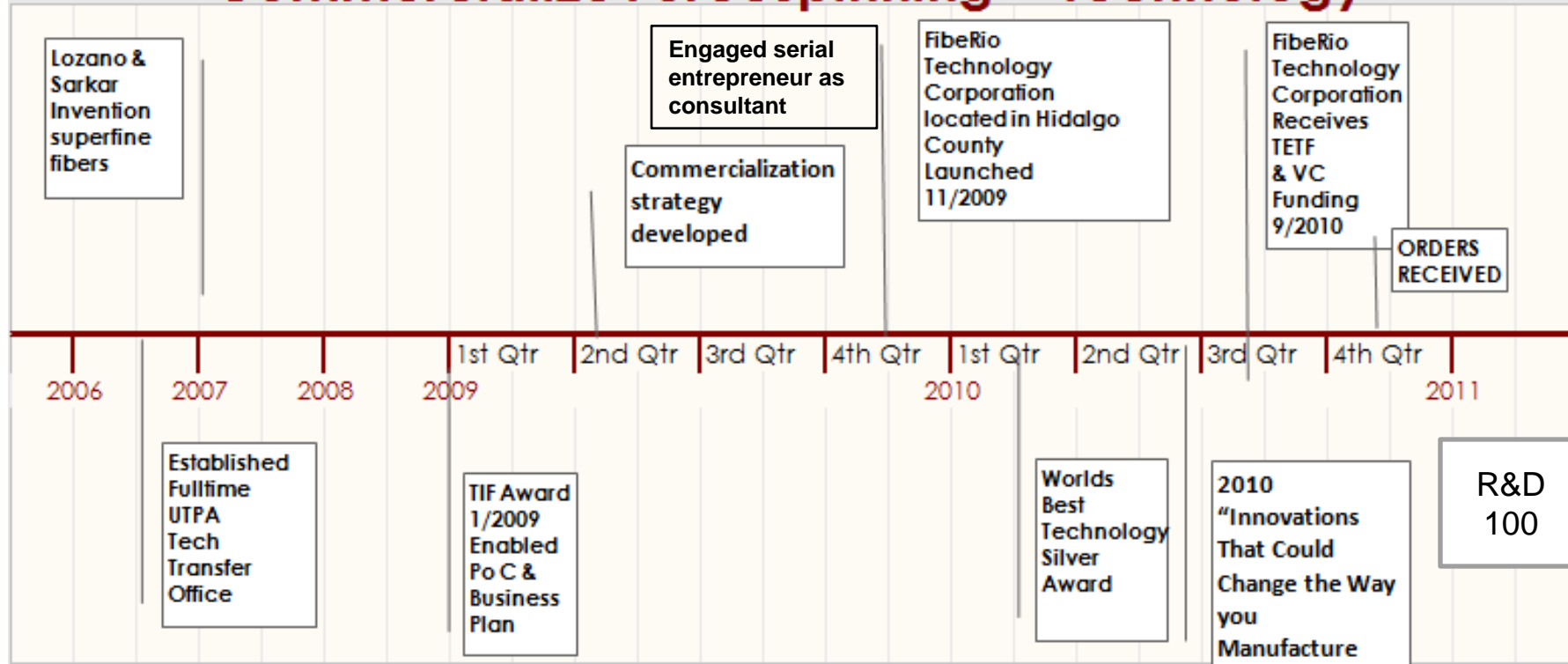
- City College of New York

- *Porous micro-particle manufacturing process based on spray drying techniques

- *Method for fluid materials testing for petroleum exploration.

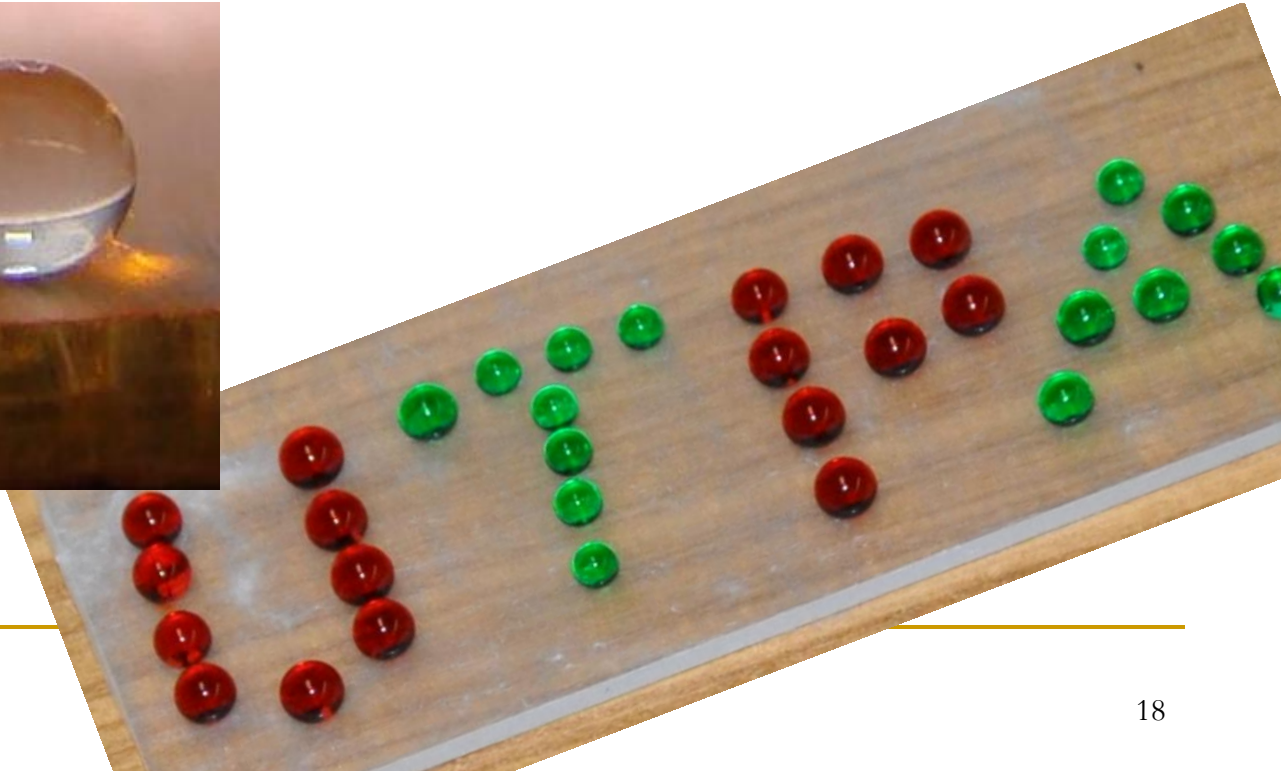
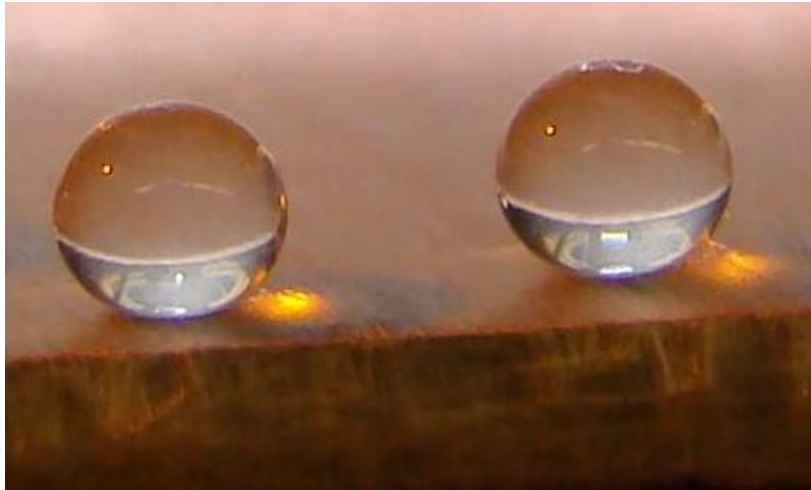
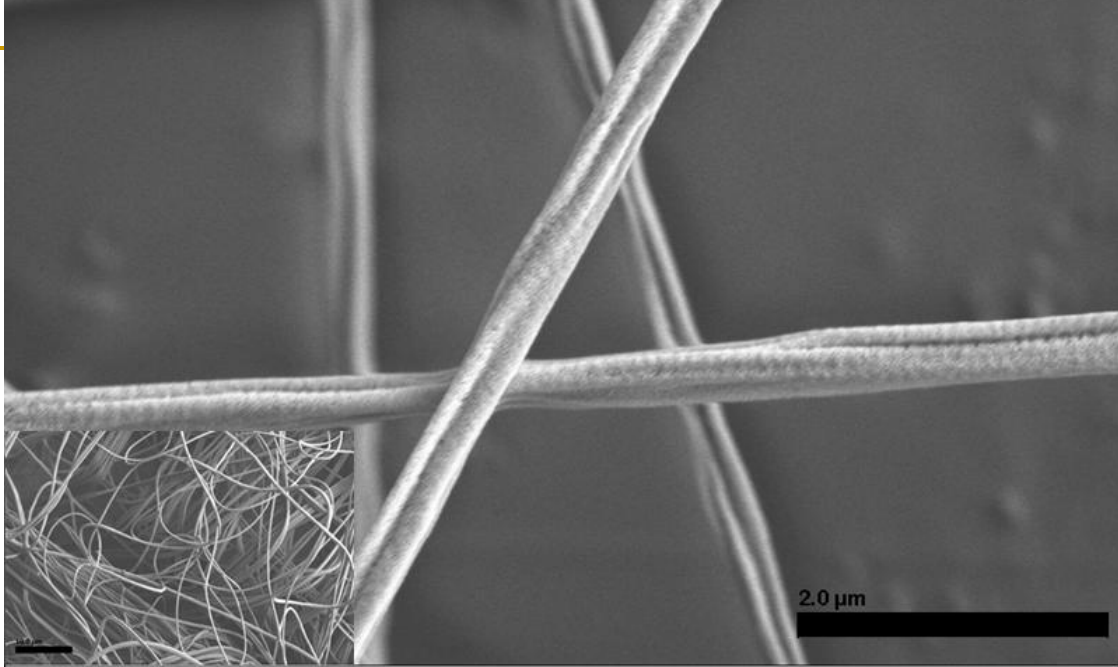
A UTPA Start-up Story

FibeRio Technology Corporation Launched to Commercialize Forcespinning™ Technology



From Launch to Funding to sales in less than 1 year

More IP



Acknowledgements

- NSF DMR
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THANK YOU!!