AAU CFR Meeting

“TECH TRANSFER 101: Technology Commercialization and New Business Creation within Universities”

John S. Swartley, MBA, PhD

Deputy Executive Director
Center for Technology Transfer

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UNIVERSITIES - A MODIFIED CORE MISSION

THE NEW INTERFACE

Academic Research (“Pushing back the Frontiers”)  

Teaching Scholarship (“Human Capital”)

Translating Discoveries to Benefit Society (“Reducing to Practice”)

- Interdisciplinary Initiatives
- Translational Research/Tech Transfer
- Economic Development
- Spin offs/Jobs/GDP
- Focused short courses
- Corporate/Government Relationships
- Agencies, Alternative Funding
What is Technology Transfer?

Technology transfer is the process of transferring scientific findings from one organization to another for the purpose of further development and commercialization. The process typically includes:

- Identifying new technologies
- Protecting technologies through patents and copyrights
- Forming development and commercialization strategies such as marketing and licensing to existing private sector companies or creating new start-up companies based on the technology

Source: Association of University Technology Managers (AUTM)
MAIN OBJECTIVES OF UNIVERSITY TECH TRANSFER

1. Facilitate commercialization for the public good
2. Promote economic growth
3. Reward, retain, and recruit faculty and students
4. Induce close ties to industry
5. Generate income

Public Interest

Private Interests
Historical Perspective

• “Science - The Endless Frontier” (1945)

• 1950s-1970s - Expansion of federally funded R&D, rise of the research university

• By late 1970s, recognition of unrealized potential from inventions
  – 28,000 government-owned patents but < 5% licensed

• Bayh-Dole Act of early 1980s
  – Birth of the modern Tech Transfer Office
Research Results = Intellectual Property (IP)

- Patents
- Copyrights
- Trademarks
- Tangible materials
- Know how
- [Trade secrets]

➢ Arrive at TTO as Invention Disclosures
The Technology Transfer Process

Research → Technology Disclosures

Intellectual Property Protection ← Opportunity Assessment

Commercialization Strategy → Agreements
products

Commercialization Strategy → Start-Ups
platforms

License Monitoring
Working with TTOs - Agreements

• Confidential Disclosure (CDA)
• Material Transfer (MTAs)
• Consulting
• Sponsored Research (SRAs)
• Option
• License
• Start Up
Conflicting Motives – Overlapping Interests

UNIVERSITY

Commercialization of New and Useful Technologies

INDUSTRY

Knowledge for knowledge’s sake
- Publications
- Academic freedom
- Open discourse

Management of knowledge for profit
- Confidentiality
- Limited public disclosure
- Internal discourse

Source: Kathleen Denis, Rockefeller University TTO
Tech Transfer by the Numbers

$48.8B in Research funding

19,827 invention disclosures

11,797 new patent applications

3,622 patents awarded

5,109 New Licenses & 555 New Start-ups

Cumulative data from AUTM Licensing Surveys FY2007
Some Highlights

• For US Institutions in FY2007:
  – $3.4 billion in industry research performed, a 15% increase over 2006 and 5% more than the increase in federal expenditures over the same period.
  – 686 new products introduced into the market in 2007
  – 30,351 cumulative license agreements
  – 6,000 cumulative startups
  – Tens of thousands of jobs created
Examples of Tech Transfer Success
Tech Transfer Revenue Sharing

**PERCENT OF NET ROYALTY INCOME**

- **INVENTORS PERSONAL SHARE** 30%
- **INVENTORS RESEARCH ACTIVITY SHARE** 12.5%
- **DEPARTMENTS OF INVENTORS SHARE** 12.5%
- **SCHOOLS OF INVENTORS SHARE** 15.0%
- **UNIVERSITY RESEARCH SHARE** 30%
- **TOTAL DISTRIBUTION OF NET ROYALTY INCOME** 100.0%
Research Commercialization: The Virtuous Cycle

1. Univ. technology
2. Transferred to society
3. Licensed at going rate
4. Funds for Univ. research

STATE $ FEDERAL FUNDING $ INDUSTRIAL $

- KNOWLEDGE
- BASIC RESEARCH
- IP / KNOW-HOW
- INDUSTRIAL IMPROVEMENTS

PRODUCTS
- TAXES
- JOBS
- EXPORTS

RETURN ON FEDERAL INVESTMENT

- GRADUATES
- PROFESSORS
- INFRASTRUCTURE
- EQUIPMENT