



Higher Education, Technology Transfer, and Economic Development

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Traditional Institutional Roles

- **Train Students**
- **Work with Regional and Local Government and Industry for Economic Development**
- **Resource for Industry**
- **Conduct Research**
- **Disseminate Information**



Technology Transfer

**Movement Of Information & Technologies
From Research Findings To Practical
Application**



Methods

- **Publication**
- **Exchange Of Data**
- **Sharing Of Materials**
- **Patent Technologies**
- **License Technologies**
- **Collaborations**
- **Public Private Partnerships**



Technology Transfer

- **Government Sponsored Research**
 - **Internal Government**
 - **Extramural Activities**



Technology Transfer Mission

- **Two Major Functions:**
 - **Development And Transfer**
 - **Policy**



Development And Transfer

- **Identify, Evaluate, Protect, Market And License Technologies To Achieve Agency Mission**
- **Monitor Progress And Receive Royalty Payments**



Policy

- **Provide Policy Direction To Agency And Recipient Scientists And Administrators**
- **Represent Department Of Health And Human Services On Technology Transfer Issues**



Office Of Technology Transfer

- **Located In The Office Of The Director, NIH**
- **Mark Rohrbaugh, PhD, JD, Director**
- **Staff Of 70 Persons—PhD, JD, MBA**
- **14 Patent Contract Firms**



Intramural Activities

- **Over 300 Employee Invention Reports/Yr.**
- **Over 2,000 Patents**
- **Over 1,500 Active Licenses**
- **200+ Technologies In The Market**
- **\$53.7 Million Royalty Income FY2003**
- **Over 80% Licenses Are Non-exclusive**
- **Over 85% Licenses With Us Firms**
- **Over 52% Licenses With Small Companies**



Federal Requirements

- **Bayh Dole Act 1980**
 - **Prior To 1980**
 - **Thrust Of The Act**
 - **Requirements**



Bayh Dole Requirements

- **Reporting Of Inventions**
- **Election Of Title**
- **Move To Practical Application**
- **Notice On Patent Applications**



Patenting And Licensing

- **Recipients Use Own Methods**
 - **Equity**
 - **Spin Offs**

- **Federal Agency Procedures**
 - **Cap On Inventor Shares**
 - **Advertising Of Licenses**
 - **Mission Related Activities**



Recipient Concerns

- **Metrics**
- **Profit Centers**
- **Non Profit Tax Exemption**
- **Access To Research Resources**



AUTM Stats

- **Invention Disclosures : 12,638**
- **Patent Applications: 10,632**
- **Start Up Companies: 364**
 - **6 Institutions Account for 25% of all Start Ups**
 - **U Cal System---23; MIT---23; Stanford---13; U. Ill.---12; U. Penn---12; U. So. Cal.---10;**



Trends

- **Traditional Licensing: Fees, Milestones, % Sales**
- **Managed Spin Off Companies**
- **Take Equity**
- **License With Money Up Front**
- **Increase Collaborations**
- **Increased Concern With Conflicts Of Interest**
- **Concern With Performance Metrics**



A Global Research Enterprise

- **More Nations Investing In Bio Medical Activities**
- **More Bio Technology Companies Outside U.S.**
- **Need For Cooperation And Sharing**



Congressional Interest

- **Study For Appropriations Committee On Protecting Public Interest In Research Technologies**
- **Foreign Patent Protection For U.S. Companies**



Current Issues

- **Conflict Of Interest/Ethics Conferences**
- **Legislative Discussion Of Drug Price Issues And Enhancing Technology Transfer**
- **Metrics—Economic Development vs. Public Benefit vs. Profit**
- **Concern With Sharing Data and Materials**
- **Improvement Of Interaction Of Government, Industry And Academia**
- **Improve Management of Technology Transfer Staff**
- **Complex Global Research Enterprise**



Future Of The Research Enterprise

- **Understanding And Balancing Research Outcomes Desired By Government, Industry And Academia**
- **Commitment From Individuals, Academia, Governments And Industry To A Robust Global Research Enterprise**



Pros and Cons

- **Major Effort**
- **High Risk/Low Financial Return**
- **Move Technologies For Improved Quality Of Life**
- **Assist Faculty And Institution**
- **Required By Law And Award Terms**



New Initiatives

- **IRTA Fellowships**
- **Proposed Minority Technology Transfer Fellows**
- **Proposal Pilot Project on TT Infrastructure at Minority Institutions**



Points Of Contact

- **Technology Transfer— <http://ott.od.nih.gov>**
- **Grant Information— <http://grants.nih.gov/grants>**
- **Contracts— <http://ocm.od.nih.gov/contracts>
<http://www.eps.gov>**



NIH Contacts

- **New Roadmap** <http://www.nihroadmap.nih.gov>
- **Sharing Biomedical Research Tools**
http://ott.nih.gov/NewPages/RTguide_final.html
- **A Plan To Insure Taxpayers' Interests Are Protected**
<http://www.nih.gov/news/070101wyden.htm>



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