Translational Research — From Laboratory to Marketplace: University of Houston's Strategy



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Division of Research Functions

Strategic investment & Fostering multidisciplinary research

Securing and managing external grants and contracts

Economic development through translational research

Structures

- Pre-Award
- Post-Award
- Compliance
- Animal Care
- Technology Commercialization
- Centers and Institutes

Productivity at a Glance FY 2011

1,386 proposal submitted
478 awards managed
482 IRB protocol reviewed
49 IACUC protocol reviewed

47 invention disclosed
29 provisional patents filed
24 utility patents filed
141 active U.S. patents issued
42 active licenses
15 active startups
16 revenue sources

Inventors (over $100,000)

Harold Kohn, Diana Chow, Alexandre Freundlich, Paul Chu, Venkat Selvamanickam

Ever-expanding Faculty Roles

HEART OF ACADEMIC INSTITUTIONS

CREATOR OF:

- New knowledge
- New technology
- Tomorrow's Scholars
- New world

THE CAPITAL OF KNOWLEDGE-BASED ECONOMY

The University: An Economic Engine!

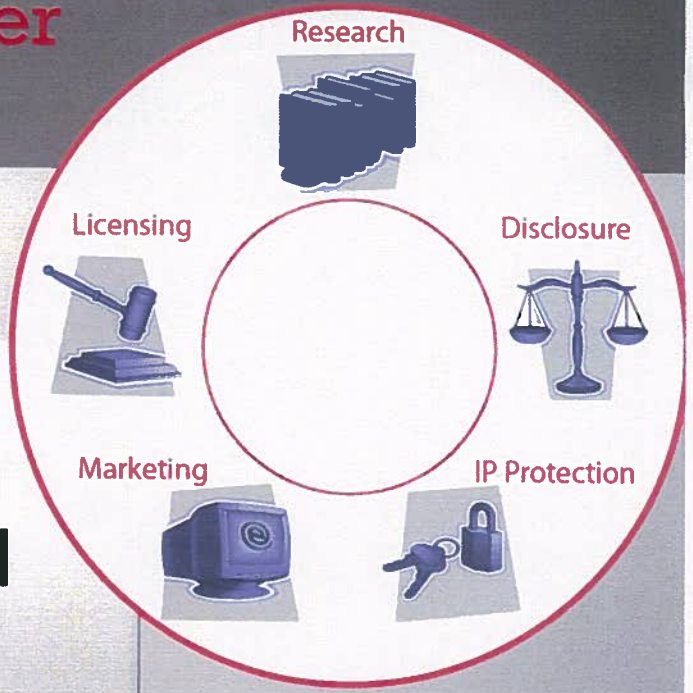


- Prepare highly skilled and educated citizens
- Create new knowledge (understanding, ideas, innovation)
- Create jobs
  - Technologies
  - Processes
  - Products
- Contribute to economic growth and global competitiveness

Benefits to the nation and world ★ Institutions are knowledge capitals

Source: Part from ASTRA

Major Functions: Technology Transfer and Economic Development



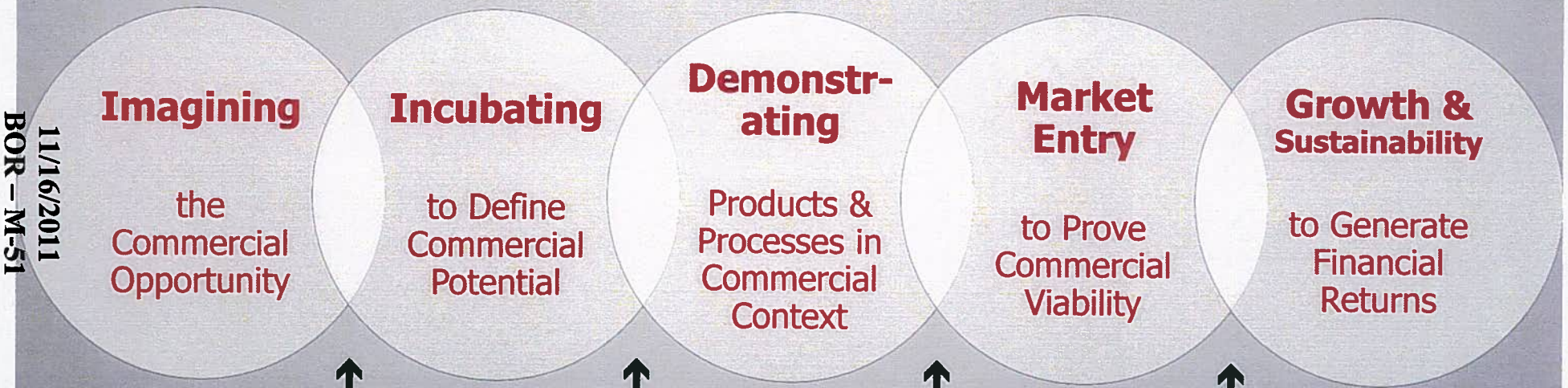
Manage Patent Portfolio

License Intellectual Property

Start-up companies

Liaison with regional economic planning and development organization

Stages of Technology Transfer



Mobilizing Resources for Incubating

Mobilizing Resources for Demonstrating

Mobilizing Resources for Market Entry

Mobilizing Resources for Growth & Sustainability

Source: The Ohio Third Frontier Program

Re-engineer Tech Transfer Operations

- Invest to create prototypes
  (valley of death!)
- Expedite transfer of laboratory research to market place
  (support faculty entrepreneurs, develop partnership with industries, create advisory board, explore IP assignment to research park)
- Pursue aggressive licensing agenda
  (adopt sound marketing strategies)
- Expand IP portfolios
  (hold regular workshops, seminars by successful faculty role models, rewards)
- Attract venture capitals for new spin-off companies
  (Organize tech shows, invite venture capitalists, publicize success stories etc.)
- Enhance public-private partnership in pursuing marketable research projects

Balancing the Need for an Open Science Regime vs. the Desire for Confidentiality and Exclusivity

Memoranda of understanding

- ✓parties
- ✓scope of work
- ✓responsibilities
- ✓timelines
- ✓deliverables

IP agreements

- ✓ownership
- ✓patenting
- ✓licensing rights
- ✓confidentiality/ publishing rights

Conflicting Views: Differences in Motives, Processes and Working Practices

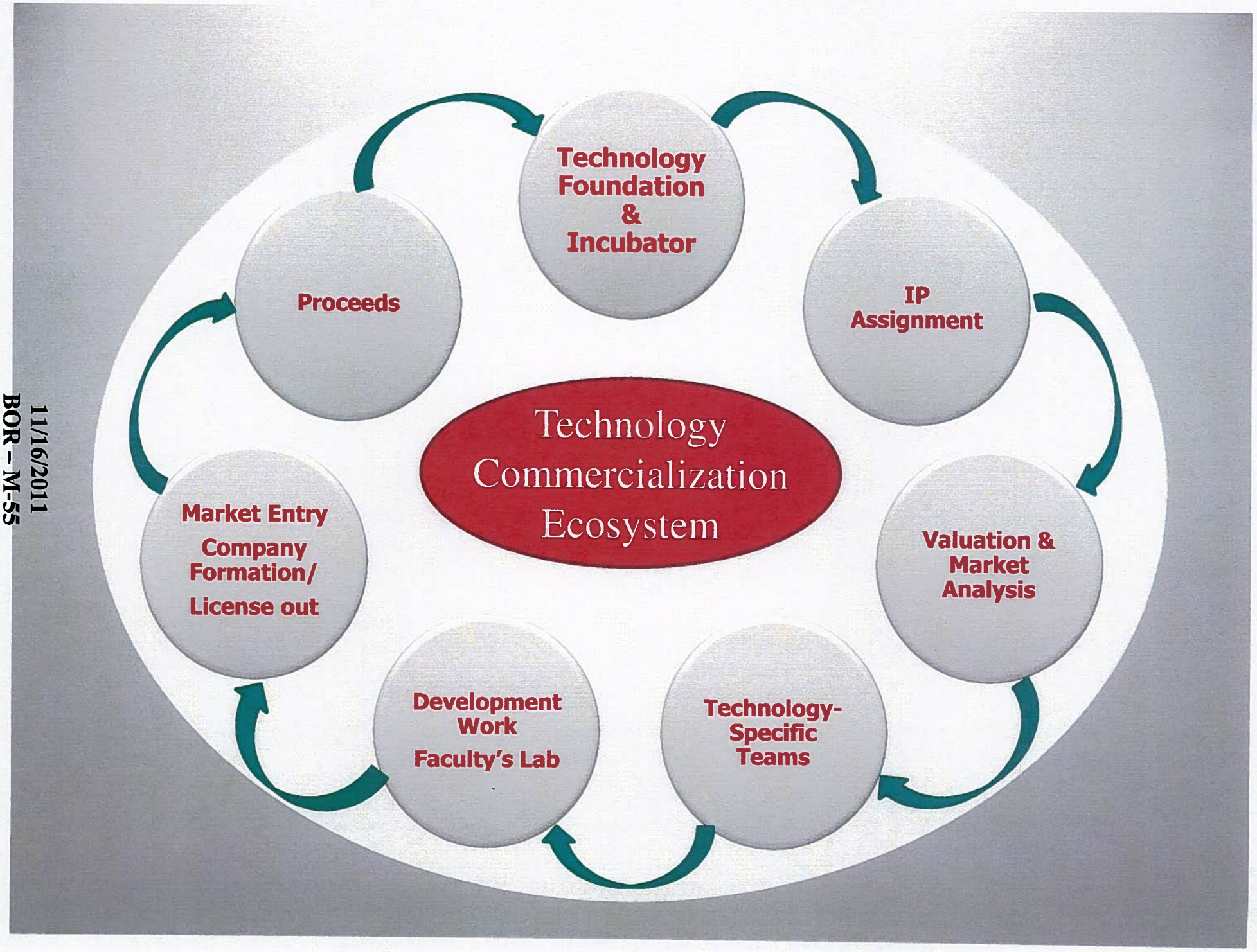
Industry Reasons for Participating in Partnerships:

- Access to new research
- Development of new products
- Maintaining a relationship with the university
- Obtaining new patents
- Solving technical problems
- Viewed as less important: Improving products and recruiting students

University Reasons:

- Obtaining funding for research assistants, lab equipment and research
- Obtaining insights into their research by field testing theory and empirical research
- Viewed as less important: Acquiring practical knowledge useful for teaching, student internships and job placement, and obtaining patentable inventions and business opportunities.

Source: Lee, Y.S. (2000) The Sustainability of University-Industry Research Collaboration. J. Tech. Transfer, 25(2), 111-133.


Technology Foundation & Incubator
IP Assignment
Valuation & Market Analysis
Technology-Specific Teams
Development Work
Faculty's Lab
Market Entry
Company Formation/
License out
Proceeds
Technology Commercialization Ecosystem

Ten Measures for Top 50 U.S. Universities

1. **Total Research Expenditures**
2. **Federal Research Expenditures**
3. **National Academy Membership**
4. **Faculty Awards**
5. **Doctorates Awarded**
6. **Postdoctoral Appointees**
7. National Merit and Achievement Scholars
8. Endowment Assets
9. Annual Giving
10. SAT Scores

Source: The Center: The Top American Research Universities