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
- 25 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!

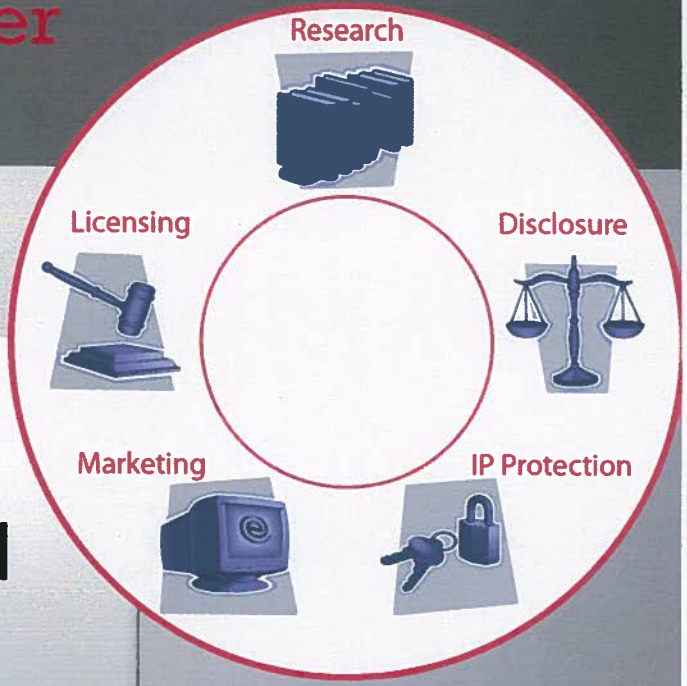


- Prepare highly skilled and educated citizens
- Create new knowledge (understanding, ideas, innovation)
- Create jobs
  - Technologies
  - Processes
  - Products
- Contribute to economic growth and global competitiveness

Benefits to the nation and world ★ Institutions are knowledge capitals

Source: Part from ASTRA

Major Functions: Technology Transfer and Economic Development



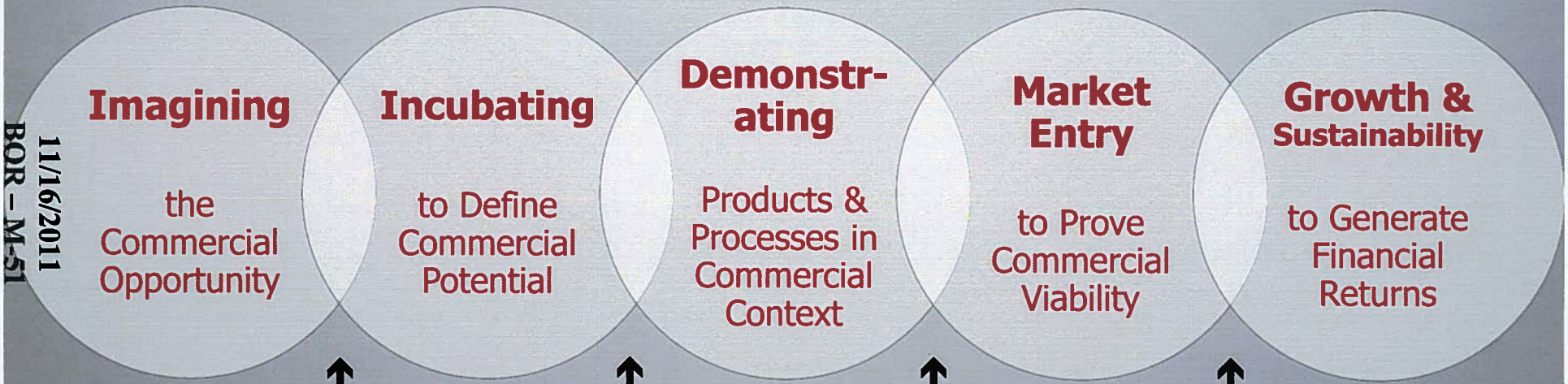
Manage Patent Portfolio

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

11/16/2011
BOR – M-51

LETTER TO SECRETARY LOCKE

RECOMMENDATIONS TO FACILITATE UNIVERSITY-BASED TECHNOLOGY COMMERCIALIZATION

- Expand efforts to encourage, recognize and reward faculty interest in research commercialization by providing incentives and encouraging engagements with industry, entrepreneurs and venture partners.
- Create or expand programs that connect faculty and students to the resources they need: industry partners, entrepreneurial mentors, translational research and "proof-of-concept" funds, accelerator facilities and venture creation services.
- Encourage streamlining and reduction in reporting and compliance requirements, which would allow faculty to increase time spent on proposal writing and research.
- Work to further reduce barriers to technology transfer to accelerate the rate at which ideas move from the lab to the marketplace. Central to this effort will be to ensure that our technology transfer offices are adequately staffed with skilled professionals who are provided with the resources to effectively and efficiently perform their jobs.
- Publicly promote the importance of technology transfer, to encourage participation by our researchers and encourage engagements with potential partners.
- Establish policies to encourage technology transfer offices to strive to maximize the societal and economic development benefits of discoveries, rather than maximizing revenues.

Letter signed by 135 Presidents/Chancellors, including Chancellor Khator.

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:

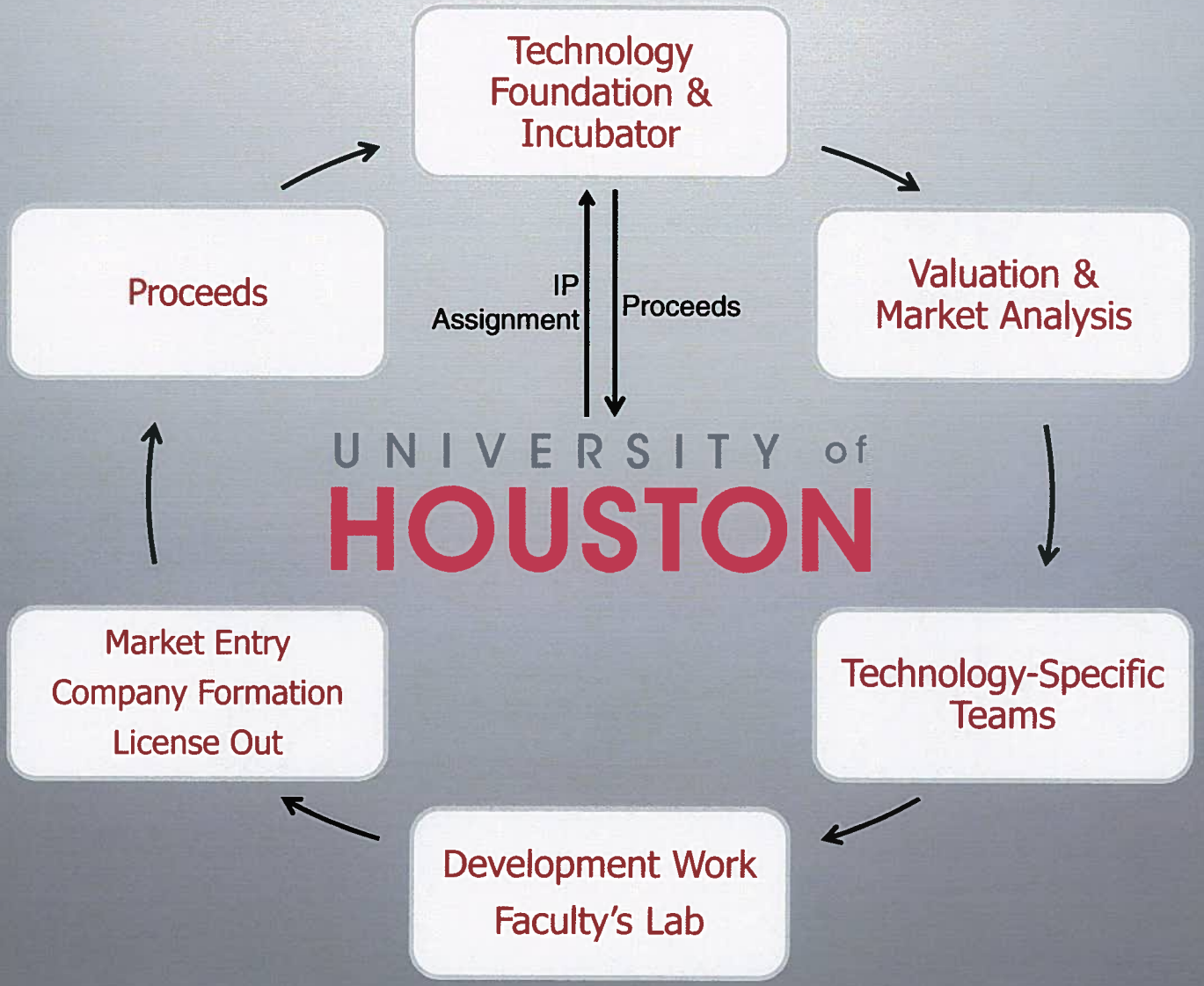
- Access to new research
- Development of new products
- Maintaining a relationship with the university
- Obtaining new patents
- Solving technical problems
- Viewed as less important: Improving products and recruiting students

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 Commercialization Ecosystem



Expected Benefits

- Increased Research Expenditure
- Increased Royalty Revenue
- Increased Postdoctoral Appointments
- Increased Translational Research
- Recruitment of Entrepreneurial Faculty
- Creation of Jobs

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

UNIVERSITY of HOUSTON

DIVISION OF RESEARCH

Thank you.