University Role & Strategy in Regional Economic Development: *The View from the University of Michigan*

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Topics

- General Pressures on Universities
- U-M technology transfer, innovation initiatives and community partnerships
- State of Michigan programs
- Significant Issues

Sources of Pressure on Universities Related to Economic Development

- Federal Government
- State & Regional Government
- Boards of Trustees
- Entrepreneurial Faculty
- Corporate Interests

Federal Issues

- Bayh-Dole
- National economic agenda, e.g. PACE
- Agency RFP requirements
- Political focus on “knowledge economy” as savior in global order
- Ambivalence about science,

  e.g. “stem cell research”
- Ambivalence about universities

State & Regional Issues

- Recognition of “knowledge economy” as most important growth sector
- Declining tax revenues
- Loss of manufacturing to global competition
- Sub-optimal regional competition
- Reduced Higher Ed appropriations

Board of Trustees

- Desire for new revenue sources
- Local corporate interests
- Political cover for other agendas
- Unrealistic expectations for growth

Entrepreneurial Faculty

- More complex research relationships
- Potential for greater conflicts of interest
- Demand for more freedom to pursue private interests
- Effort to generate more resources, both personal and research-related

Corporate Interests

- Need for new research and technology under constrained corporate budgets
- Global competition driving down costs and closing innovation gap
- Philanthropy tied to financial interests

Impacts of Pressure

- Sponsored Programs Office
  - New activities
  - Complex agreements
  - Pressures to “be easy”
- Technology Transfer
  - Unrealistic expectations for revenue
  - Pressure on service delivery
- Compliance / Regulatory Arena
  - Ambivalence about COI at all levels

Research:
Cash Cow or *Sacred Cow*?

- Can we accelerate pace to agreements *and* still do a careful assessment of risk?
- Can we promote promiscuous engagement with industry *and* still do a sufficient review of COI at every level?
- Do we understand the impact on our mission of increasing such activity?

Michigan Economic Trends

- Manufacturing no longer economic driver
  - o Result: Unemployment in MI highest in US
  - o Result: Large out migration of population
- US economic growth resulting from knowledge
  - o Leaders: California, Washington, Massachusetts
  - o ***All leveraged university research***
- Michigan not keeping pace with US trends

Michigan business and academic communities are risk averse.

Why Participate in Economic Development?

- Provides "real life" learning opportunities for students and research challenges for faculty
- Enhances the regional reputation to attract and retain university and community resources, including talented and entrepreneurial faculty and students
- Quality of life investments can be financed by successful initiatives
- Maximizes the regional benefits of technology transfer
- State support for and public recognition of a university should improve in response to economic development contributions

U-M Profile FY2008

- Total research expenditures: ~$850 million
- Industry sponsored expenditures: $45 million
  - 372 unique principal investigators
  - 778 total projects
  - 436 unique industry sponsors
- Technology transfer activities included:
  - 306 new inventions disclosures
  - 91 agreements
  - 13 new startup companies
- Licensing revenues of $25 million
- (Commercialization and work with industry is still a very small portion of what we do….)

U-M Advancing Innovation Initiative

- Promote greater industry collaboration
- Increase the transfer of technology
- Enhance access to university researchers and resources
- Stimulate regional, state, & national economic development
- Promote a culture of innovation and risk
- Reduce barriers and increase transparency in relationships with industry
- Improve regional and national student placement
- Strengthen support for higher education
- Set quantitative goals for tracking our success

U-M Innovation Initiative: Progress and Plans Underway

- Reduction of industry indirect cost rate to federal rate
- Improved faculty equity distribution policy in force
- Streamlined approaches to industry contract management implemented
- Provision of cost sharing on industry agreements currently provided
- Inter-unit conversations on “innovation research” and “entrepreneurship” in progress
- Business Engagement Center initiated

Objectives for the U-M Business Engagement Center

- ***Integrate*** university functions to fundamentally improve partnerships with industry
- ***Promote*** university assets and priorities to enhance industrial partnerships and support economic development
- ***Connect*** identified industry needs with the appropriate university functions
- ***Maximize*** industry support for the University (with this approach CoE has seen overall corporate support grow from $20 to $32 million annually)

The Center for Entrepreneurship

Mission:
empower students, faculty and staff at the University of Michigan to pursue entrepreneurial achievements

Models for University Business Development

	Flexible Licensing Terms	Progressive University Policies	Business Plan Development Assistance	Help in Recruiting Talent	Aid in Securing Funding	Business Operations Participation	Direct Investment
Hands-in-Pockets							
Hands-Off	x	x					
Hands-On	x	x	x	x	x		
Up-to-Elbows	x	x	x	x	x	x	x
			Form the Licensee			Operational Role	

University of Michigan = Hands-On

University Research Corridor

An alliance of:

- Michigan State University
- University of Michigan
- Wayne State University

formed to transform, strengthen and diversify the state's economy

working together to leverage their collective assets and encourage collaboration with business, government and communities to help accelerate innovation and economic growth

ANN ARBOR SPARK

IGNITING INNOVATION

SPARK Vision and Mission

Vision: Lead the Ann Arbor Region to become a nationally known center for innovation, vibrant business growth and world class talent

Mission: Enhance regional innovation-based economic development in the Ann Arbor Region by supporting

- Business Acceleration
- Start-up Funding
- Talent Recruitment and Development
- Business Outreach
- Events and Marketing

Michigan Initiative for Innovation and Entrepreneurship (MIIE)

- Consortium of all 15 Michigan public universities
- Fund competitions launched with a pilot grant of $2 million awarded by the C.S. Mott Foundation
- MIIE initiatives are modeled on the highly successful Michigan Universities Commercialization Initiative (MUCI)

MIIE: *We Propose to Change the Michigan Economy*

- **Expand partnerships** between foundations, universities, industry & investors
- **Generate risk capital** for Michigan ventures
- Make **education and investment in entrepreneurship** a priority
- **Create a culture of innovation and risk**
- **Strengthen policy and infrastructure** support

MIIE activities are supported by a grant from the C.S. Mott Foundation.

MIIE: Engaging Higher Education

- Create campuses that integrate entrepreneurial activity *in their core*
- Drive entrepreneurial activity
  - Build capacity for innovation
  - Attract a *critical mass* of companies and talent
- Build campus cultures
  - Help students and faculty pursue their entrepreneurial interests *in Michigan*
- Encourage intellectual risk-taking

MIIE activities are supported by a grant from the C.S. Mott Foundation.

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MICHIGAN UNIVERSITIES COMMERCIALIZATION INITIATIVE

A Model for Entrepreneurial Advancement

- **Launched 2001 with Life Sciences Corridor grant**
- **Supported by $4.7M from 21st Century Jobs Fund**
  - Intellectual Property Commercialization Committee (IPCC) is advisory board
  - Entrepreneurial proposals recruited four times a year from the 10 partners
- **Two MUCI Challenge Fund Review Committees**
  - One to review Life Sciences proposals
  - One to review proposals in Advanced Automotive & Manufacturing, Alternative Energy, and Homeland Security
- **Committee members from industry, VCs, economic development groups, and participating universities**

MUCI serves as the model for the Michigan Initiative

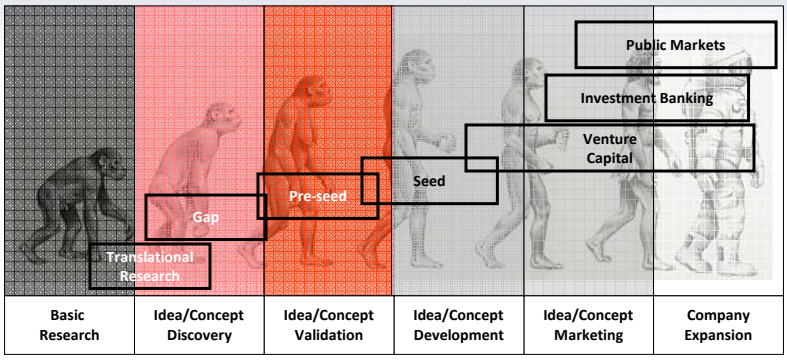
muci
MICHIGAN UNIVERSITIES COMMERCIALIZATION INITIATIVE

What do all these Michigan University start-ups have in common?

A MUCI Challenge Fund award provided early support of its core technology moving it forward on its path to commercialization.

XORAN TECHNOLOGIE
Incept BioSystems
Velcura Therapeutics
NeuroNexus Technologies
GlyTag
Drug Targeting Technologies
LYCERA
Biopolymer Innovations
Novel drug delivery research
Originus, Inc.
BioDBx
AquaBioChip LLC
Analyzing 20 Pathogens Simultaneously using VMG Chip
Biophotonic Solutions Inc.
RiboNovix, Inc
genistry gm
SenSound
Sound, as we see it.
fiduciarius ab
anticas inventus
NEURXUS, INC.

Stages of Capital Investment



Highest Risk, Lowest Valuation ⇐ The critical "Gap"⇒ **Lowest Risk, Highest Valuation**

MIIE Pilot Program Elements

Technology Commercialization Fund

- Supports specific steps to move *university-owned* technology towards licensing
- Awards are capped at $150,000
- A 50% match is required
- Evaluation Criteria
  - Competitive Advantage
  - Market Need
  - Commercialization Plan
  - Timeline to market acceptance
  - Validation of interest/support

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MIIE Pilot Program Elements
Industry & Economic Engagement Fund

- Supports transfer knowledge (vs. patentable technology) from universities to Michigan industry
- Awards are capped at $100,000
- A 1:1 (100%) match is required
- Evaluation Criteria
  - Impact on profitability, competitiveness and/or growth of participating companies
  - Impact on private sector relevance of associated university programs and personnel
  - Impact on entrepreneurial training of students and faculty
  - Evidence of private sector demand and support

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MIIE Pilot Program Elements
Talent Retention & Entrepreneurship Education Fund

- To advance knowledge of entrepreneurial principles and practices and advance a culture of technological innovation and entrepreneurship in Michigan
- Awards are capped at $100,000
- A 50% match
- Evaluation Criteria
  - Sustainability of proposed program
  - Innovative approaches to expanding entrepreneurial education/experiential learning
  - Number of students involved and likelihood involvement will lead to employment in Michigan's innovation economy
  - Potential to increase faculty or student entrepreneurship
  - Private sector commitment to participate in project

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Significant Issues

- How can we best model the continuum of research, development, consulting, and technology transfer emerging from universities and the associated IP and contract issues and considerations?
- How do we balance the traditional role of universities as “citadels of knowledge” with the increasing expectation that they become “economic engines”?