Commercialization

Academic Affairs Faculty Forum

Commercialization and Knowledge Transfer

Wednesday, December 6, 2017

Jeffrey E. Hecker, Executive VP for Academic Affairs & Provost
Why Increase Focus on Commercialization and Knowledge Transfer?

THE NATIONAL PICTURE
Declining Federal Research Funding

Total Federal Research Funding in Billions

Where is the growth in sources of funding?

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University Research Expenditures
Percentage Change by Funding Source (Indexed to 100)

<table>
<thead>
<tr>
<th>Source</th>
<th>Total (2015)</th>
<th>Outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional</td>
<td>$16.7B</td>
<td>Increasing fastest, but not sustainable</td>
</tr>
<tr>
<td>Other</td>
<td>$6.3B</td>
<td>Increasing, has similarities to Corporate</td>
</tr>
<tr>
<td>Corporate</td>
<td>$4.0B</td>
<td>Growing, greatest amount of elasticity</td>
</tr>
<tr>
<td>Federal</td>
<td>$37.9B</td>
<td>Slow deceleration, unlikely to recover</td>
</tr>
<tr>
<td>State</td>
<td>$3.8B</td>
<td>No growth, unlikely to recover</td>
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Why Increase Focus on Commercialization and Knowledge Transfer?

THE NATIONAL PICTURE

THE STATE PICTURE
UMS Board of Trustees’ Key Priorities for next 5 Years

• Increase Enrollment
• Improve Student Success & Completion
• Enhance the Fiscal Positioning of UMS
• Support Maine Through Research & Economic Development
Why Increase Focus on Commercialization and Knowledge Transfer?

_________________ THE NATIONAL PICTURE _____________

_________________ THE STATE PICTURE _____________

_________________ THE UMAINE PICTURE _____________
THE UMAINE PICTURE

Commercialization successes

– FY2018 $500K in licensing revenue
– Industry Collaborations FY17 = 389, up from 180 in FY12
– FBRI – Biofine collaboration
– LASST – Environetix Technology Corporation
– Process Development Center – licensing production of Cellulose Nanofibrils
– Advanced Structures & Composites Center – Advanced Infrastructure Technologies

Interest of Private Foundation

– Alfond W² Ocean Engineering Lab
– Assessment of UMaine IP assets
President Hunter’s Charge to Provost (June, 2016)

- Considering a governance structure which can be inclusive but highly efficient in guiding our growth and progress
- Modernizing policies and processes as needed
- Evaluating different structures, such as affiliated corporations or enterprises, which could enhance our agility and opportunities and reduce organizational risk
Commercialization Working Group

Jeffrey Hecker, Executive Vice President for Academic Affairs & Provost (Chair)
Carol Kim, Vice President for Research & Dean of the Graduate School
Jake Ward, Vice President for Innovation & Economic Development
Kris Burton, Director of Technology Commercialization
Larry Lewellen, Vice President for Human Resources
James Thelen, UMS General Counsel & Chancellor’s Chief of Staff
Robin Delcourt, Special Assistant to the Executive Vice President for Academic Affairs & Provost
Kody Varahramyan, Vice President for Research & Dean of the Graduate School (joined CWG in July, 2017)
CWG Work Plan

1. Review of UMaine’s Intellectual Property Portfolio
2. Consider Research Foundation or Other Structure
3. Evaluate Experience of Partners
4. Identify Best Practices
CWG Work Plan

1. Review of UMaine’s Intellectual Property Portfolio
2. Consider Research Foundation or Other Structure
3. Evaluate Experience of Partners
4. Identify Best Practices
Consultation

1) TreMonti Consulting, LLC selected
   • Reviewed/evaluated 30 IP assets
   • Developed marketing document for each

2) Invention Evaluator (Vortechs Group)

3) Verrill Dana LLP
CWG Work Plan

1. Review of UMaine’s Intellectual Property Portfolio
2. Consider Research Foundation or Other Structure
3. Evaluate Experience of Partners
4. Identify Best Practices
Questions

– What are the reasons to create such an entity?
– What are the risks and challenges (e.g., operational, legal, public perception)?
– What is the possible range of foundation activities?
– Compared to current UMaine operations:
  • Which activities would merit transfer to a foundation?
  • What is the ranked urgency and time frame for transfer?
  • What are the assessment criteria and how should the decision be reassessed in the future?
Consultation – TreMonti Consulting LLC

1) Review UMaine current processes and activities related to commercialization

2) Compare against benchmarked peer institutions

3) Make recommendation regarding Research Foundation or similar entity

4) Recommend structural elements
Methods

- **UMaine campus fact-finding**
  - Met with more than 30 campus stakeholders and several from broader community
  - Provided presentation and led discussion on purposes/benefits of research foundations
  - Produced report regarding independent research foundation

- **Peer interviews**
  - Senior leadership of various peer institutions interviewed
CWG Work Plan

1. Review of UMaine’s Intellectual Property Portfolio
2. Consider Research Foundation or Other Structure
3. Evaluate Experience of Partners
4. Identify Best Practices
• Shanna Cox, Project Tipping Point LLC
  – Assisted with collecting/aggregating information from UMaine faculty/staff and industry partners in parallel processes
    • Survey
      – 188 Faculty/Staff responded (88% of these identified as tenure-track faculty)
      – 93 Industry Partners responded
    • Focus groups/interviews
      – 34 Faculty/Staff participated
      – 23 Industry Partners participated
CWG Work Plan

1. Review of UMaine’s Intellectual Property Portfolio
2. Consider Research Foundation or Other Structure
3. Evaluate Experience of Partners
4. Identify Best Practices
CWG: Best Practices

- Education Advisory Board (EAB) custom research brief
- Review of peer institutions’ commercialization-related organizational structure, policies, etc.
- Review of Human Resources issues/policies
  - Compliance
  - Impact on Tenure and Promotion
  - Incentive options
  - Market-rate compensation
- Attended national meetings and workshops
Report to President

August 1, 2017
Key Findings

- About 25% of the evaluated segment of UMaine’s IP portfolio has strong potential for commercialization.

- There is value in utilizing an independent third party to:
  - Review intellectual property
  - Provide feedback to the researcher
  - Evaluate the readiness for advancing to market
  - Recommend next steps
Key Findings

• Independent research foundation allows variety of functions to enhance commercialization
  – Vehicle for more flexible recruitment, retention and compensation practices for employees
  – Improved marketing of UMaine resources to potential industry partners
  – Greater service to faculty and staff researchers
  – Increased ability to adapt to changing business and industry landscapes
Key Findings

• Experiences of industry partners have generally been positive

• Nonetheless, UMaine still has a long way to go to create an explicit culture of commercialization and knowledge transfer

• Business and industry partners highlighted the need for
  – Improved communication/marketing of services
  – Improved service delivery
  – Wider array of services
Key Findings

• UMaine faculty and staff express the need for
  – Clear policies
  – Additional resources
  – Aligned incentives supportive of commercialization and innovation

• Viable approaches exist to motivate faculty and staff to engage in commercialization activities and to reward success

• Best practices with respect to intellectual property management will require changes to UMS policy and procedures
Recommendations

- Create the *Innovation and Economic Development Council*
  - Advisory to the President
  - Cabinet-level and other campus leaders
  - Assure economic development as strategic priority of UMaine
  - Monitor policies and practices
  - Recommend appropriate changes to support commercialization
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<td>Chris Lindstrom</td>
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<tr>
<td>Renee Kelly</td>
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<td>Kris Burton</td>
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<tr>
<td>Ivan Manev</td>
<td>Dean, Maine Business School</td>
</tr>
<tr>
<td>Dana Humphrey</td>
<td>Dean, College of Engineering</td>
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<tr>
<td>Habib Dagher</td>
<td>Executive Director, Advanced Structures and Composites Center</td>
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<tr>
<td>Debbie Bouchard</td>
<td>Director, Aquaculture Research Institute</td>
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<tr>
<td>Cathy Billings</td>
<td>Associate Director for Communications and Development, Lobster Institute</td>
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<tr>
<td>Philip Trostel</td>
<td>Professor of Economics and Public Policy</td>
</tr>
<tr>
<td>Karissa Tilbury</td>
<td>Assistant Professor of Bioengineering</td>
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<td>James Thelen</td>
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</tr>
<tr>
<td>David Neivandt</td>
<td>Associate Vice President for Research and Graduate Studies</td>
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<tr>
<td>TBD</td>
<td>Research Foundation representative</td>
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<tr>
<td>TBD</td>
<td>UMM representative</td>
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<tr>
<td>Jason Charland</td>
<td>Director of Grant Development</td>
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<td>(ex officio)</td>
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Recommendations

• Create the *Innovation and Economic Development Council*

• Create a Research Foundation
Research Foundation

• University of Maine Research & Development Foundation exists

• Not currently active

• Board meeting to start process
Recommendations

• Create the *Innovation and Economic Development Council*

• Create a Research Foundation

• Identify/secure resources to support Research Foundation and other commercialization initiatives
Secure Resources

- UMS Research Reinvestment Funds (RRF)
  - Commercialization Summit

- Harold Alfond Foundation
  - Report to HAF Board
  - Coordinate with other initiatives
Recommendations

• Create the *Innovation and Economic Development Council*

• Create a Research Foundation

• Identify/secure resources to support Research Foundation and other commercialization initiatives

• Revamp the processes for industry engagement and improve policies related to students and IP
Revamping Policies & Procedures

- Student-generated IP Guidelines
  - Clarification on management of IP for students and industry sponsors
- UMS IP Policy
  - Updated policy language to comply with current law
- Human Resources Policy
  - Best practices for faculty incentives
- Industry Engagement
  - Enhanced options and processes for sponsored research
- Faculty/Staff Resources
  - Professional Development, RRF grants and commercialization accelerator
Questions & Discussion