"A Strategic Approach to Resource Stewardship"

David Ward
Interim Chancellor
UW-Madison

Board of Regents
December 8, 2011
Shifts in Public Higher Education Financing

A revenue crisis. A funding gap.

- The “pendulum” of adequate/inadequate funding no longer applies
- No major revenue gains for standard tuition increments
- Federal and philanthropic funds provide the “margin of excellence” rather than “base” budget.
- Public universities need to develop a new strategy to remain competitive and advance a vision.
A Strategic Framework for Advancing our Vision:
“A Model Public University”
Our Shifting Revenue Sources

**EXPENDITURES**
- Buildings, Special Programs, Research and Services
- Research
- Education
- Operations

**FUNDING SOURCES**
- Philanthropy
- Margin of Excellence
- Research and Technology Transfer
- Funding Gap
- State Funding
- Tuition
- Auxiliary Revenue

*Wisconsin University of Wisconsin-Madison*

12/5/2011
Responding to Revenue Shifts

**Expenditures: Future**
- Buildings, Special Programs, Research and Services
- Research
- Education
- Operations

**Funding Sources: Future**
- Philanthropy
- Research and Technology Transfer
- Educational Innovation
- State Funding
- Tuition
- Auxiliary Revenue
- Administrative Excellence
Innovation and Flexibilities

**Conventional Sources**
- Promote moderate but targeted tuition increases
- Sustain state support to leverage of other funds

**System and State Flexibilities**
- Increased institutional autonomy
- Personnel systems
- Reallocation of base funding

**Philanthropy**
- Increased investment in the base budget
- Need-based aid to ensure access
- Fully endowed named professorships
- Funds for Educational Innovation
Innovation and Flexibilities

Educational Innovation
• Rethink how we educate
• Rethink academic structures
• Rethink comprehensiveness
• Scale best practices for maximum gains

Administrative Excellence
• Information technology - consolidation and aggregation
• Space management and reduction of leased space
• Demand management of supplies
• Coordination of facilities organizations
• Streamlining grants management processes

Enhancing our Research Impact
Enhancing Research Impact

Paul M. DeLuca, Jr.
Provost

Board of Regents
December 8, 2011
Can we enhance our research impact?

- Economic Impact of UW-Madison
- Existing Research Funding Base
- University Research Park
- WARF
- Discovery to Product – D2P
Trends in the Gross Domestic Product in the US, 2007-IV to 2011-III

(in trillions of constant 2005 dollars) and nonfarm payroll employment (millions of jobs)

Sources: GDP data Bureau of Economic Analysis U.S. Department of Commerce. (www.bea.gov/national/index.htm)
Data on Nonfarm payroll employment BLS website (www.bls.gov/data/#employment)
Credit: Economic Activity and the State of the College Labor Market, a presentation by Paul E. Harrington, Center for Labor Markets and Policy, Drexel University
### Trends in the Employment to Population Ratio of the Civilian Non Institutional Working Age Population in the U.S., by Educational Attainment

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>H.S. Students</td>
<td>44.5</td>
<td>30.6</td>
<td>25.2</td>
<td>23.8</td>
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<tr>
<td>H.S. Dropouts</td>
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<td>42.4</td>
<td>32.0</td>
<td>31.9</td>
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<tr>
<td>H.S. Graduates</td>
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<td>59.2</td>
<td>57.2</td>
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<td>College Students</td>
<td>47.2</td>
<td>45.1</td>
<td>42.0</td>
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<td>Some College</td>
<td>74.1</td>
<td>67.6</td>
<td>62.8</td>
<td>64.1</td>
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<tr>
<td>Associate's Degree</td>
<td>77.4</td>
<td>70.6</td>
<td>67.6</td>
<td>67.1</td>
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<tr>
<td>Bachelor's Degree</td>
<td>79.7</td>
<td>75.8</td>
<td>75.0</td>
<td>75.4</td>
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<tr>
<td>M.A. or Higher Degree</td>
<td>83.0</td>
<td>76.7</td>
<td>76.5</td>
<td>77.1</td>
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Credit: Economic Activity and the State of the College Labor Market, a presentation by Paul E. Harrington, Center for Labor Markets and Policy, Drexel University
UW-Madison Economic Impact Report

$12.4 Billion in annual total impact on the Wisconsin economy

• $9.6 Billion economic impact from UW-Madison operations and spending of faculty, staff, students, and visitors
• $2.1 Billion economic impact from out-of-state monies
• $1 Billion in research & development expenditures
• $2 Billion economic impact from UW-connected startups

- $862 Million economic impact from UW-affiliated organizations
- 128,146 Wisconsin jobs created and supported
- $614 Million in tax revenue generated
UW-Madison Extramural Research Support

Millions of Dollars

- 2002: 561.2 (3rd Non-Federal, 4th Federal)
- 2004: 704.8 (4th Non-Federal, 4th Federal)
- 2005: 769.8 (4th Non-Federal, 3rd Federal)
- 2006: 703 (3rd Non-Federal, 2nd Federal)
- 2007: 724.6 (3rd Non-Federal, 3rd Federal)
- 2008: 688 (3rd Non-Federal, 3rd Federal)
- 2009: 810.5 (3rd Non-Federal, 3rd Federal)
- 2010: 977 (3rd Non-Federal, 3rd Federal)
- 2011: 848.9 (3rd Non-Federal, 3rd Federal)
University Research Park

- 126 companies; >3,500 employees, $183.3M value
  - Urban Campus (2009)
  - URP Phase II (2012)
- URP companies born of UW innovations:
  - FluGen, Quintessence Biosciences, Roche NimbleGen, Stemina Biomarker Discovery, Stratatech, Third Wave Technologies, WiCell Research Institute, Zurex Pharma…
- ~$500,000/yr returned to UW-Madison research programs
- $826M annual contribution to WI economy

(Northstar Economics, Inc. 2010)
Wisconsin Alumni Research Foundation

- Over $1.25 Billion in grant support to UW-Madison from successful technology commercialization outcomes
- Hundreds of active commercial licensees for UW-Madison innovations with $882M in license revenues
- Over 50 startups attracting $800M+ in investment capital (last 10 years)
- National Medal of Technology recipient for long record of tech transfer success
- Broad-based real-world benefits on a truly global scale; agriculture, nutrition, health care, information technology
Endowment Growth vs. Inventor Shares and Gifts to UW

- Year End Portfolio Value
- Gross Royalty Revenue
- Gifts & Grants to UW (Excludes MIR)
- Inventor and Other Shared Royalties
WARF: Start Ups

- University spin-outs
  - Equity in over 30 companies
  - Licenses with over 50 active companies

- Representative technologies of start-ups
  - Biotechnology: medical, agricultural, tools
  - Medical devices
  - Telecommunications
  - Small molecule pharmaceutical
  - Software
## Institutional Performance

### What’s wrong with this slide!

<table>
<thead>
<tr>
<th></th>
<th>Wisconsin</th>
<th>Utah</th>
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<tr>
<td><strong>Startups</strong></td>
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<tr>
<td>2009</td>
<td>1</td>
<td>23</td>
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<tr>
<td>2008</td>
<td>6</td>
<td>23</td>
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<tr>
<td>2007</td>
<td>6</td>
<td>16</td>
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<td>2006</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
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|                |           |      |
| **Disclosures**|           |      |
| 2009           | 293       | 180  |
| 2008           | 324       | 195  |
| 2007           | 368       | 190  |
| 2006           | 337       | 170  |

<table>
<thead>
<tr>
<th></th>
<th>Wisconsin</th>
<th>Utah</th>
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<tbody>
<tr>
<td><strong>Commercially Sponsored Research</strong></td>
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<tr>
<td>2009</td>
<td>$47.4 mil</td>
<td>$40.4 mil</td>
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<td>2008</td>
<td>$29.5 mil</td>
<td>$44.2 mil</td>
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Discovery to Product: D2P

- Discovery: Creation of New Knowledge
  - Identify potential commercializable technologies
  - Protection of Intellectual Property
  - Pre-commercialization development
  - Capitalization (funding research and concepts, product development, pre-startup funding)
  - Business development, seek investors or licensees, and venture services

Venture Funds
D2P – Two paths: License or Commercialize

License or Commercialize?

A
Exands on existing technology base

License to company

B
Entirely new products

Commercialize

VC-Manager Lead

Inventor Founder Lead
D2P: Coordinating the Whole Process

Discovery → To → Product

Disclosure → Incubation → Business Plan → License → Startup → Funding → Marketplace

Wisconstartrepreneur
D2P Structure

UW-Madison

WARF

Discovery To Product

Target Areas – High Potential Technologies

Physical Sciences/Engineering
Agriculture
Medical Devices
Comp. Science/Info Tech
Pharma
Other Target Areas…
Future Issues

- Does the State’s investment provide adequate leverage for:
  - Philanthropy
  - Research and Technology Transfer

- Are the Current flexibilities adequate to support leveraged revenues?

- How do we combine our National and Statewide Roles?
Additional Resources
US Unemployment/Job Openings

January 2001 - September 2011

Unemployment to Job Openings

Month - Year
AAU Members: Annual Competitively-Funded Federal Research Support (in $M)

- Public Universities (Average $272 M)
- Private Universities (Average $294 M)

Notes: NSF report on federal research expenditures, excluding USDA expenditures. Also excludes the Applied Physics Laboratory at Johns Hopkins University. Annual expenditures are an average of expenditures in the fiscal years of 2006, 2007 and 2008.
IPEDS Completions in 2007, 2008 and 2009. Doctoral professional practice degrees are not included.
### Ratio of Unemployment to Job Openings by Major Industry 2001-2011

<table>
<thead>
<tr>
<th>Industry</th>
<th>2001 Q1</th>
<th>2011 Q1</th>
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<tbody>
<tr>
<td>Construction</td>
<td>4.11</td>
<td>31.18</td>
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<tr>
<td>Manufacturing</td>
<td>2.19</td>
<td>6.85</td>
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<tr>
<td>Durable</td>
<td>1.87</td>
<td>6.58</td>
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<tr>
<td>Nondurable</td>
<td>2.88</td>
<td>7.41</td>
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<tr>
<td>Trade, Transportation, and Utilities</td>
<td>1.43</td>
<td>5.20</td>
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<tr>
<td>Wholesale Trade</td>
<td>1.47</td>
<td>5.20</td>
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<tr>
<td>Retail Trade</td>
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<tr>
<td>Transportation, Warehousing, and Utilities</td>
<td>1.26</td>
<td>5.18</td>
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<tr>
<td>Information</td>
<td>0.59</td>
<td>2.46</td>
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<tr>
<td>Financial Activities</td>
<td>0.72</td>
<td>3.02</td>
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<tr>
<td>Professional and Business Services</td>
<td>0.83</td>
<td>2.60</td>
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<tr>
<td>Education and Health Services</td>
<td>0.54</td>
<td>2.15</td>
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<tr>
<td>Leisure and Hospitality</td>
<td>1.25</td>
<td>5.13</td>
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<tr>
<td>Other Services</td>
<td>0.90</td>
<td>4.07</td>
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<tr>
<td>Government</td>
<td>0.77</td>
<td>3.01</td>
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</table>

*Not seasonally adjusted

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University Research Park Overview

- 255 Developed Acres
- 37 Buildings
- 1.8 Million Square Feet
- $183.3 Million Assessed Value
- $3.6 Million Local Taxes

- 126 Companies
- 3,500 Employees
- $220 Million Payroll
- 75% BS Degrees
- 33% Advanced Degrees
- $64,000 Average Income
Driving Force in Wisconsin’s New Economy

- $826 Million Economic Impact Annually
- Supports 9,300 Jobs
- $42 Million in Taxes Annually
MGE Innovation Center

- Since 1989
- 48 Companies
- 113,000 Square Feet
- 85 Incubator Suites
- 92% Occupied
- “10 Technology Incubators That are Changing the World”, Forbes.com May 2010
46,000 SF

- ENERGY EFFICIENT
  - 30% Lower Utility Expense
  - Savings Powers 75 Homes

- LAB READY
  - CFM, BTU, TONS, MW Capacity
  - Precision Environmental Controls
Metro Innovation Center

- Downtown @ 1245 East Washington
- 10 Suites – 2 Available
- 2 Conference Rooms
- Shared Server Room
- 1 GB Internet
University Research Park²

- 70 Sites on 375 Acres
- 210 Companies
- 6,000 Employees
- Urbanist & Midwest Prairie Design
- 3 Phases Starting in 2012/13