FY2013 Research Report

S. Jack Hu
Interim Vice President for Research
U-M Office of Research

- Support interdisciplinary research
- Build partnerships with all sectors
- Provide central research administration and service
- Oversee compliance and research policy
- Manage technology transfer
- Coordinate research communication
- Anticipate major trends in research
U-M FY 2013 Research Expenditure

$1,328,721,164

- 1st among public universities, 2nd among all universities
- Funds faculty research and scholarship
- Supports 2,326 graduate students (tuition, stipend and benefits), 1,237 postdocs, and many undergraduate students in research and research training
Federal Funding Trend by Agency
U-M Research Expenditures (all sources)
UM Federal Funding by Agency
(in $millions)
# U-M Research Expenditures by Industrial Sources

<table>
<thead>
<tr>
<th>Industry Research (total)</th>
<th>FY12</th>
<th>FY13</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Contract</td>
<td>$42,823,532</td>
<td>$48,909,842</td>
<td>14%</td>
</tr>
<tr>
<td>Subcontract (on Federal Prime)</td>
<td>$16,188,129</td>
<td>$19,478,729</td>
<td>20%</td>
</tr>
<tr>
<td>Corporate Foundations (est.)</td>
<td>$2,847,708</td>
<td>$3,393,391</td>
<td>19%</td>
</tr>
<tr>
<td>Other Industry Research</td>
<td>$2,167,515</td>
<td>$1,445,025</td>
<td>-33%</td>
</tr>
<tr>
<td>Total Research Expenditures</td>
<td>$60,026,884</td>
<td>$73,226,987</td>
<td>14%</td>
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</tbody>
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Tech Transfer Results

- Invention Reports
- License/Option Agreements
Tech Transfer Revenues

![Graph showing Tech Transfer Revenues]

- **Equity or Paid-up Royalties ($ Millions)**
- **Royalties ($ Millions)**

**2003** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013**
---|---|---|---|---|---|---|---|---|---|---
0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0

Prof. Hunein Maassab
Inventor of FluMist
2014 Distinguished University Innovator

- Research on drug discovery for cancer treatment
- 67 invention disclosures
- 30 issued patents
- 3 license agreements
- Co-founder of 3 companies

Prof. Shaomeng Wang
## FY 2014 Awards Processed
(July 2013 - January 2014)

*Includes a $97.5M NASA project on “Cyclone Global Navigation Satellite System”*

<table>
<thead>
<tr>
<th></th>
<th>Number of Awards</th>
<th>Value of Awards</th>
</tr>
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<tbody>
<tr>
<td><strong>FY 2012</strong></td>
<td>1759</td>
<td>$719,692,649</td>
</tr>
<tr>
<td><strong>FY 2013</strong></td>
<td>1762</td>
<td>$803,769,222*</td>
</tr>
<tr>
<td><strong>FY 2014</strong></td>
<td>1924</td>
<td>$652,481,072</td>
</tr>
</tbody>
</table>

% Change from 2012: 9.4%    -9.3%
% Change from 2013: 9.2%    -18.8%
The Challenge

With declining federal funding for research, how can we sustain and grow U-M’s research enterprise?
Opportunities

- Develop larger scale projects that build on innovative partnerships and our interdisciplinary strengths
- Strengthen industry outreach
- Expand clinical trials
- Seek more funding from foundations
- Pursue philanthropic gifts for research
- Develop more international partnerships
- Streamline the proposal submission process and improve faculty productivity
Example 1. American Light-Weight Materials Manufacturing Innovation Institute

- Part of White House’s National Network of Manufacturing Innovation

- Public-private partnership, founded by UM, Ohio State and the Edison Welding Institute.

- Focus on advanced lightweight metal manufacturing technology for transition to industry

- $70 million federal investment, $80 million cost share from industry, states and universities

*Design of National Network for Manufacturing Innovation*  
*Source: M Molnar, Advanced Manufacturing National Program Office*
Example 2: Mobility Transformation Center

- Partnership with governments and industry
- $100 million project through 2021
- Unique off-road and on-road test capabilities
- Engineering, Urban Planning, Policy, Economics, Medicine, Law, Social Sciences, Business

Connected and automated vehicles that improve safety, reduce congestion, and enable sustainable transportation
Mobility Transformation Facility

- A unique simulated urban environment for testing connected and automated vehicles before they are tried out in real traffic.
- Include a variety of roadways, intersections, traffic signs and signals, sidewalks, benches, simulated buildings, street lights, etc.
- Support provided by MDOT, Office of the Provost, Office of Research, Engineering, and Transportation Research Institute.
Summary

• U-M remains one of the world’s premier research universities.

• Federally sponsored research to universities has been declining since 2009. We need to develop innovative approaches and investments to mitigate and adapt to this challenge.

• We must work to sustain and enhance the federal investment in university research.