THE STATE OF RESEARCH

2014 Annual Report
RESEARCH PRIORITIES

Produce **excellence**

Be **transformative**, lead not follow

Advance **transdisciplinary** work

Focus on critical **global challenges**

Present real, **measurable results**
RESEARCH STATISTICS
AWARDS BY SOURCE

$741M

6.8%

NIH
$287.4

Dollar amounts represented in millions
FEDERAL FUNDING

The American Association for the Advancement of Science reports FY13-14 budgets for federal R&D increased by 1.1% for the following: DOD, DOE, HHS, NIH, NSF and USDA.

During the same period, the University of Minnesota increased its funding from these agencies by 2.4%.
AWARDS BY SOURCE

$741M

STATISTICS

Dollar amounts represented in millions
SUSAN GALATOWITSCH
CFANS

Galatowitsch, professor and department head of Fisheries, Wildlife and Conservation Biology, received $8.7 million from the Legislative-Citizen Commission on Minnesota Resources to further discovery in the U’s Aquatic Invasive Species Research Center.
AWARDS BY COLLEGE & CAMPUS

$741M

CSE $140.3
PUBLIC HEALTH $94.5
OTHER HEALTH SCIENCES $64.5
CFANS $56.2
CEHD $44.8
DENTISTRY, NURSING, PHARMACY & VET MED $38.0
OTHER $32.7
CBS $21.2
OTHER TC PROVOST $19.2
UMD $14.8
CLA $12.0
UMC, UMM, UMR $1.3
MEDICAL SCHOOL $201.4

Dollar amounts represented in millions
AWARDS BY MAJOR SOURCE CATEGORY

Dollar amounts represented in millions
## TECHNOLOGY COMMERCIALIZATION

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<td>244</td>
<td>255</td>
<td>250</td>
<td>321</td>
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<td>41</td>
<td>51</td>
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<tr>
<td><strong>NEW U.S. PATENT FILINGS</strong></td>
<td>52</td>
<td>65</td>
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<td>115</td>
<td>148</td>
<td>138</td>
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<tr>
<td><strong>NEW LICENSES</strong> *</td>
<td>63</td>
<td>44</td>
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<td><strong>CURRENT REVENUE GENERATING AGREEMENTS</strong> *</td>
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<td>306</td>
<td>399</td>
<td>457</td>
<td>426</td>
<td>331</td>
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*New Licenses and Current Revenue Generating Agreements now include Express Licenses with revenue greater than $1,000. This accounts for an increase of 56 agreements over FY2013.*

Dollar amounts represented in millions.
JIAN-PING WANG
CSE

Developed a hand-held biosensing device that detects traces of up to 64 different diseases from malaria to cancer from a single drop of blood or urine.

Wang’s discoveries have led to 39 patents, three startups, a prize at the 2014 Nokia Sensing Xchallenge, and a feature in a National Journal article on the impact of innovation and entrepreneurship at the U of M.
MADE IN MINNESOTA
CELEBRATING U INNOVATORS

The OVPR hosted an event on Dec. 11, 2014 to honor the outstanding accomplishments of the university research community.

285 inventors whose work had been licensed or patented during fiscal years 2012-2014 were recognized.

Additionally, this year marked the inaugural presentation of the Innovation Awards.

Early Innovator Award
Kechun Zhang, CSE
Inventor of a renewable, sugar-based alternative to petroleum.

Entrepreneurial Researcher Award
Daniel Voytas, CBS
Inventor of TALENs, a method of gene editing with broad applications in agriculture and medicine.

Impact Award
Robert Vince, AHC
Inventor of the AIDS drug, Ziagen.
# TECHNOLOGY COMMERCIALIZATION

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Universities Showing Flexibility on Industry-Sponsored Research
NATIONAL & GLOBAL ANALYSIS
## TOP 15 INSTITUTIONS

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<thead>
<tr>
<th>Institution</th>
<th>NSF - 2013</th>
<th>CMUP - 2013</th>
<th>ARWU - 2014 (SHANGHAI)</th>
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<tbody>
<tr>
<td></td>
<td>U.S. PUBLIC</td>
<td>EXPENDITURES</td>
<td>U.S. PUBLIC</td>
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<tr>
<td>MICHIGAN</td>
<td>1</td>
<td>$1,375,117</td>
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<tr>
<td>WASHINGTON</td>
<td>2</td>
<td>$1,192,513</td>
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<tr>
<td>WISCONSIN</td>
<td>3</td>
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<tr>
<td>UC SAN DIEGO</td>
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<tr>
<td>UC SAN FRANCISCO</td>
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<td>$1,042,841</td>
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<tr>
<td>NORTH CAROLINA</td>
<td>6</td>
<td>$973,007</td>
<td>9 of 9</td>
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<tr>
<td>UCLA</td>
<td>7</td>
<td>$966,659</td>
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<tr>
<td>PITTSBURGH</td>
<td>8</td>
<td>$872,736</td>
<td>8 of 9</td>
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<tr>
<td>MINNESOTA–TWIN CITIES*</td>
<td>9</td>
<td>$858,378</td>
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<tr>
<td>PENN STATE</td>
<td>10</td>
<td>$837,880</td>
<td>8 of 9</td>
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<tr>
<td>TEXAS A&amp;M</td>
<td>11</td>
<td>$820,015</td>
<td>6 of 9</td>
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<tr>
<td>OHIO STATE</td>
<td>12</td>
<td>$793,373</td>
<td>8 of 9</td>
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<tr>
<td>ILLINOIS</td>
<td>13</td>
<td>$743,487</td>
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<tr>
<td>GEORGIA TECH</td>
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<tr>
<td>UC BERKELEY</td>
<td>15</td>
<td>$727,002</td>
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</table>

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*Total expenditures for all U of M campuses: $882M
CENTRAL FOR MEASURING U PERFORMANCE

For the first time, the U of M is part of a distinguished group that ranks in the **top 25 on all nine indicators** the CMUP uses to gauge an institution’s research performance, accomplishment and strength:

Total Research, Federal Research, Endowment Assets, Annual Giving, National Academy Members, Faculty Awards, Doctorates Granted, Postdoctoral Appointees, SAT/ACT Range
OPPORTUNITIES
INVESTING IN INNOVATION
THE TRIPLE HELIX

University  Business  Government
MNDRIVE: YEAR ONE

354 researchers
70 departments
3 campuses
75+ external partners
120 projects funded
111 faculty, students and staff hired
21 patents and licenses submitted
ENGAGEMENT
EFFECTIVE PARTNERSHIPS

The Corporate Engagement Workgroup will facilitate effective collaborations between a dynamic portfolio of industry partners and the university's many colleges, units and campuses—making it easier to connect, convene and collaborate with university innovation and talent.
FIVE YEARS FORWARD
THROUGH COLLECTIVE INSPIRATION AND DISCOVERY

Enhance research excellence
Advance transdisciplinary partnerships
Accelerate transfer of knowledge for the public good
Promote culture of serendipity
THE 3% SOLUTION
SUPPORTING THE PLAN

The OVPR will reallocate 3% of its own operations and maintenance apportionment in order to provide funds for investment back into the system-wide research strategic plan that the institution worked so hard to create.
GRANT-IN-AID

Over the past five years, nearly $15M has been awarded for 560 projects.

Our ROI for programs that have external funding availability is 1:6—
every $1 we invest yields us an average of $6 coming into the U.

Also, 21% of Grant-in-Aid awards support the arts and humanities.
MINNESOTA FUTURES

These large grants encourage faculty to advance new ideas and reach across academic disciplines.

Professor Vipin Kumar’s project used satellite imagery to track changes in forest cover and expand understanding of climate change.

This project alone leveraged $13.2M, resulting in 1:7 return—or $7 for every $1 invested.
INSTITUTIONAL FUNDING

The university has helped fund nearly $175 million to further research and discovery across multiple disciplines.
PROMOTE CULTURE OF SERENDIPITY
DATA SOURCES

AWARDS BY SOURCE

AWARDS BY COLLEGE & CAMPUS

AWARDS BY MAJOR SOURCE CATEGORY

TECHNOLOGY COMMERCIALIZATION

OVPR Data Services

AWARDS BY CIC INSTITUTION

Committee on Institutional Cooperation (researchadmin.iu.edu/cic.htm)

WebCASPAR (webcaspar.nsf.gov)

ARTICLES AND QUOTES

National Journal (bit.ly/1lBCPYd)

Forbes.com (onforbes.es/1B7Addl)

Bloomberg BNA (bit.ly/1vF93aC)

TOP 15 INSTITUTIONS

Association of American Universities Data Exchange (aaude.org)

University of California, San Francisco

University of Texas M.D. Anderson Cancer Center

National Science Foundation (nsf.gov/statistics/srvyherd/)

Center for Measuring University Performance (mup.asu.edu)

Note: Rankings are based on nine measures: Total Research, Federal Research, Endowment Assets, Annual Giving, National Academy Members, Faculty Awards, Doctorates Granted, Postdoctoral Appointees and SAT/ACT range.

Academic Ranking of World Universities (shanghairanking.com)

Note: Rankings are determined by several indicators, including alumni and staff winning Nobel Prizes and Fields Medals, highly cited researchers, papers published in Nature and Science, papers indexed in major citation indices, and the per capita academic performance of an institution.