



THE STATE OF RESEARCH

2014 Annual Report



UNIVERSITY OF MINNESOTA
Driven to Discover™

RESEARCH PRIORITIES

Produce **excellence**

Be **transformative**, lead not follow

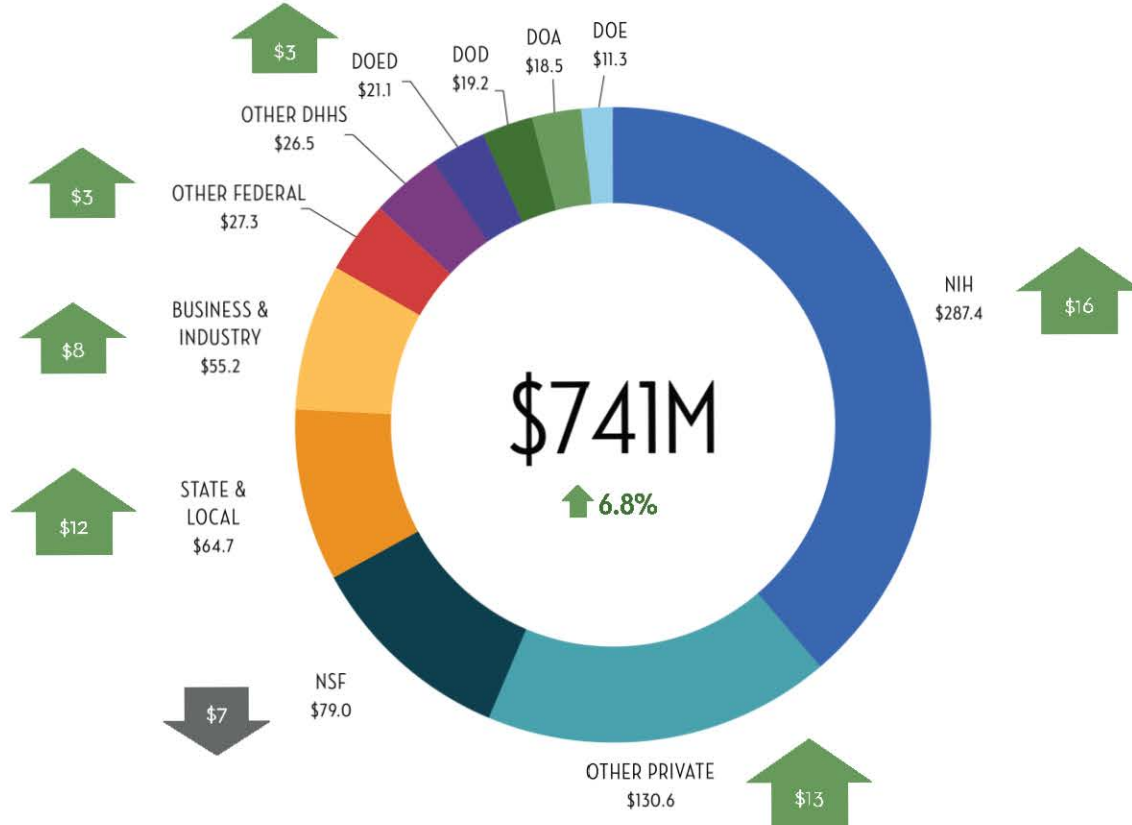
Advance **transdisciplinary** work

Focus on critical **global challenges**

Present real, **measurable results**

RESEARCH STATISTICS

AWARDS BY SOURCE

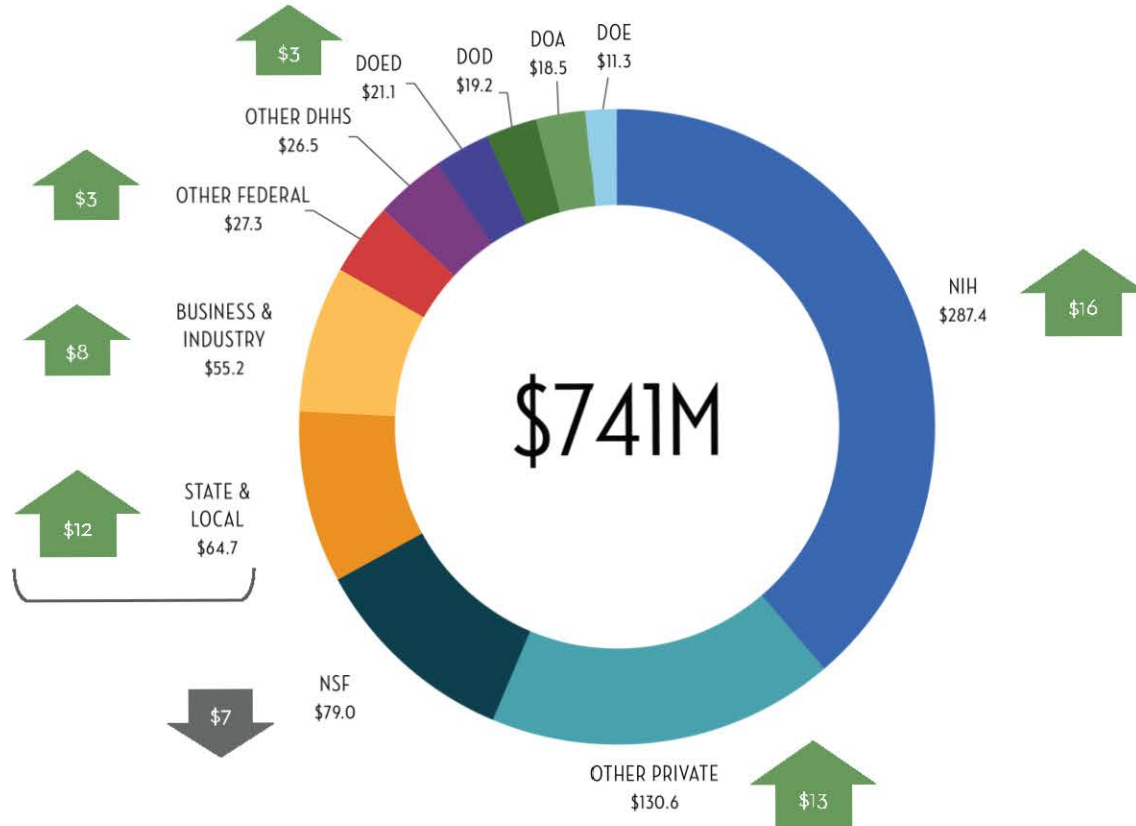


FEDERAL FUNDING

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



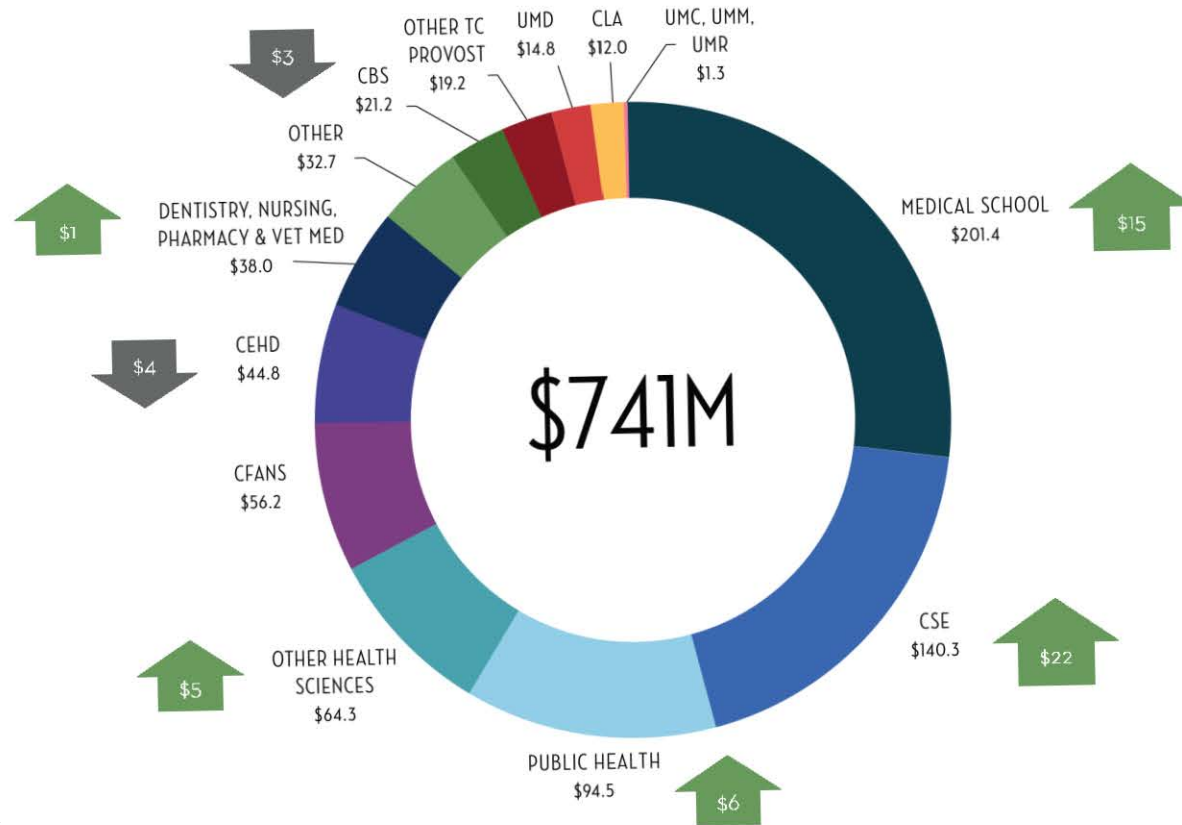
SUSAN GALATOWITSCH

CFANS

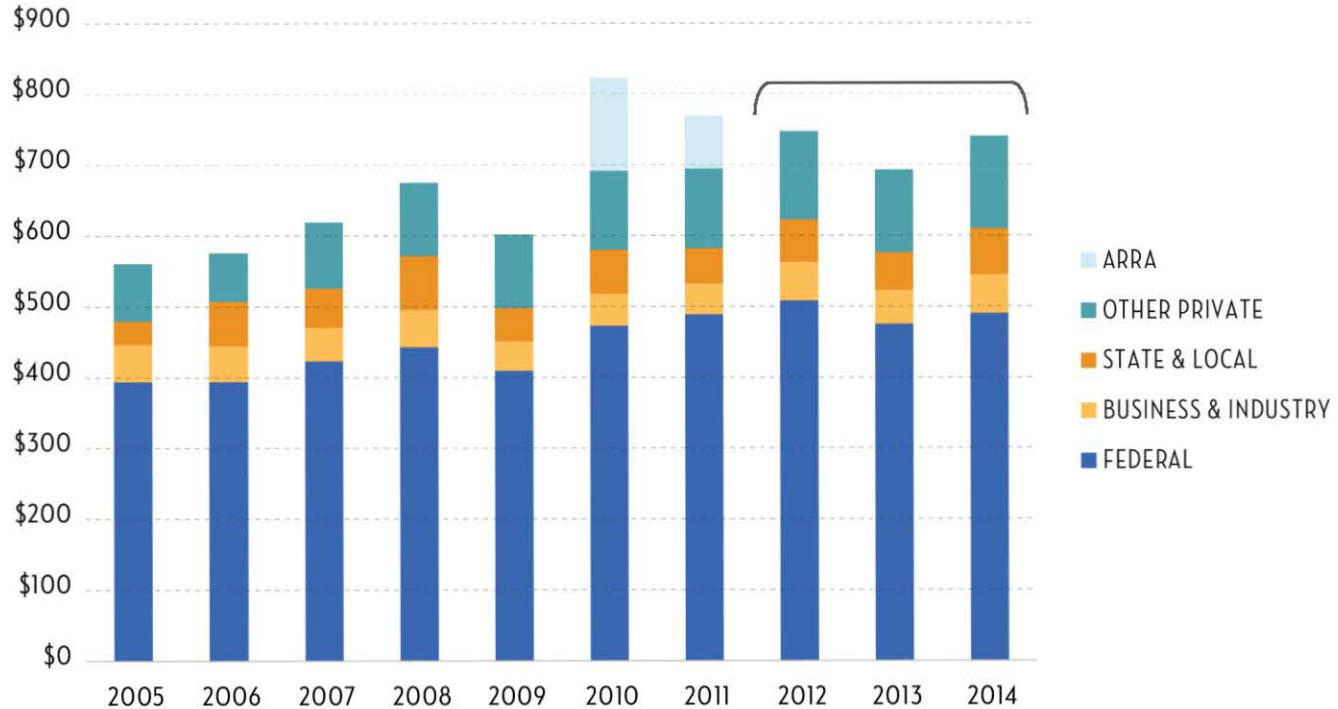
Galatowitsch, professor and department head of Fisheries, Wildlife and Conservation Biology, received **\$8.7 million** from the Legislative-Citizen Commission on Minnesota Resources to further discovery in the U's Aquatic Invasive Species Research Center.



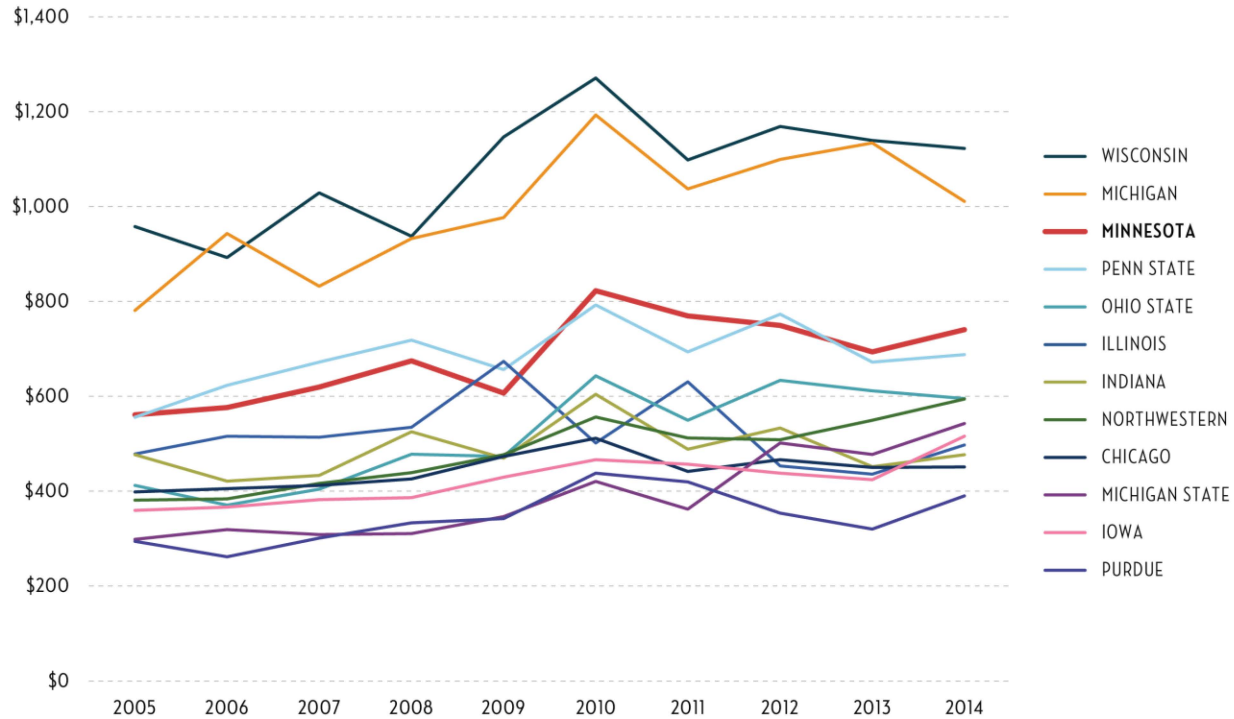
AWARDS BY COLLEGE & CAMPUS



AWARDS BY MAJOR SOURCE CATEGORY



AWARDS BY CIC INSTITUTION



TECHNOLOGY COMMERCIALIZATION

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014
INVENTION DISCLOSURES	217	244	255	250	321	331	343
MN-IP AGREEMENTS	-	-	-	-	14	41	51
NEW U.S. PATENT FILINGS	52	65	66	78	115	148	138
NEW LICENSES [†]	63	44	67	76	71	91	154
STARTUPS	2	3	8	9	12	14	15
CURRENT REVENUE GENERATING AGREEMENTS [†]	281	306	399	457	426	331	429
GROSS REVENUES	\$86.9	\$95.2	\$83.8	\$10.1	\$45.7	\$39.5	\$27.4
NON-GLAXO REVENUES	\$7.9	\$8.7	\$8.6	\$10.1	\$10.7	\$12.5	\$23.4
OUTGOING MATERIAL TRANSFER AGREEMENTS	67	106	171	271	313	281	288

Dollar amounts represented in millions

[†] 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.



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.



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Bloomberg
BNA

Universities Showing Flexibility on Industry-Sponsored Research

BLOOMBERG BNA
MEDICAL RESEARCH LAW & POLICY REPORT

NATIONAL & GLOBAL ANALYSIS

TOP 15 INSTITUTIONS

	NSF - 2013		CMUP - 2013	ARWU - 2014 (SHANGHAI)		
	U.S. PUBLIC	EXPENDITURES	U.S. PUBLIC	WORLD	U.S.	U.S. PUBLIC
MICHIGAN	1	\$1,375,117	9 of 9	22	17	6
WASHINGTON	2	\$1,192,513	8 of 9	15	13	4
WISCONSIN	3	\$1,123,501	9 of 9	24	18	7
UC SAN DIEGO	4	\$1,075,554	8 of 9	14	12	3
UC SAN FRANCISCO	5	\$1,042,841	7 of 8	18	16	5
NORTH CAROLINA	6	\$973,007	9 of 9	36	27	11
UCLA	7	\$966,659	9 of 9	12	10	2
PITTSBURGH	8	\$872,736	8 of 9	65	41	23
MINNESOTA–TWIN CITIES†	9	\$858,378	9 of 9	30	22	9
PENN STATE	10	\$837,880	8 of 9	58	37	20
TEXAS A&M	11	\$820,015	6 of 9	96	51	29
OHIO STATE	12	\$793,373	8 of 9	64	40	22
ILLINOIS	13	\$743,487	9 of 9	28	20	8
GEORGIA TECH	14	\$730,488	7 of 9	99	52	30
UC BERKELEY	15	\$727,002	9 of 9	4	4	1

Dollar amounts represented in millions

†Total expenditures for all U of M campuses: \$882M

CENTER 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



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





UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

research.umn.edu

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.html)

WebCASPAR (webcaspar.nsf.gov)

ARTICLES AND QUOTES

National Journal (bit.ly/1lBCPYd)

Forbes.com (onforb.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.