



THE STATE OF RESEARCH

2013 Annual Report



UNIVERSITY OF MINNESOTA

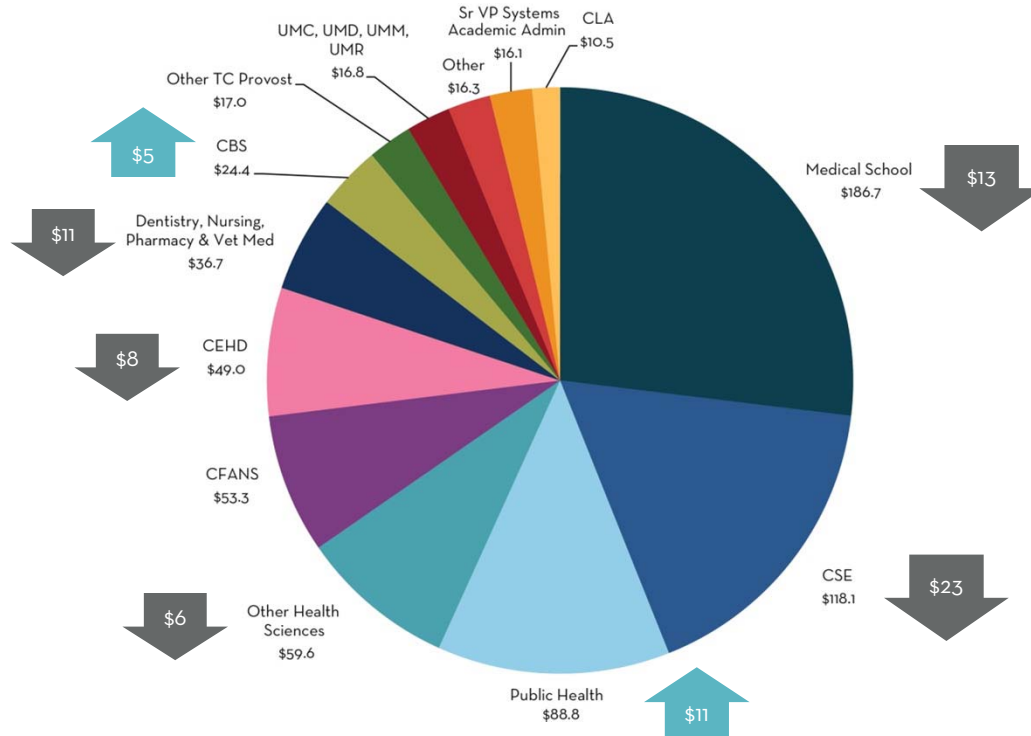
Driven to Discover™

RESEARCH STATISTICS

RESEARCH STATISTICS

FY13 AWARDS BY COLLEGE & CAMPUS | \$693M

University of Minnesota faculty and staff competed successfully for \$693M in sponsored research awards in fiscal 2013.

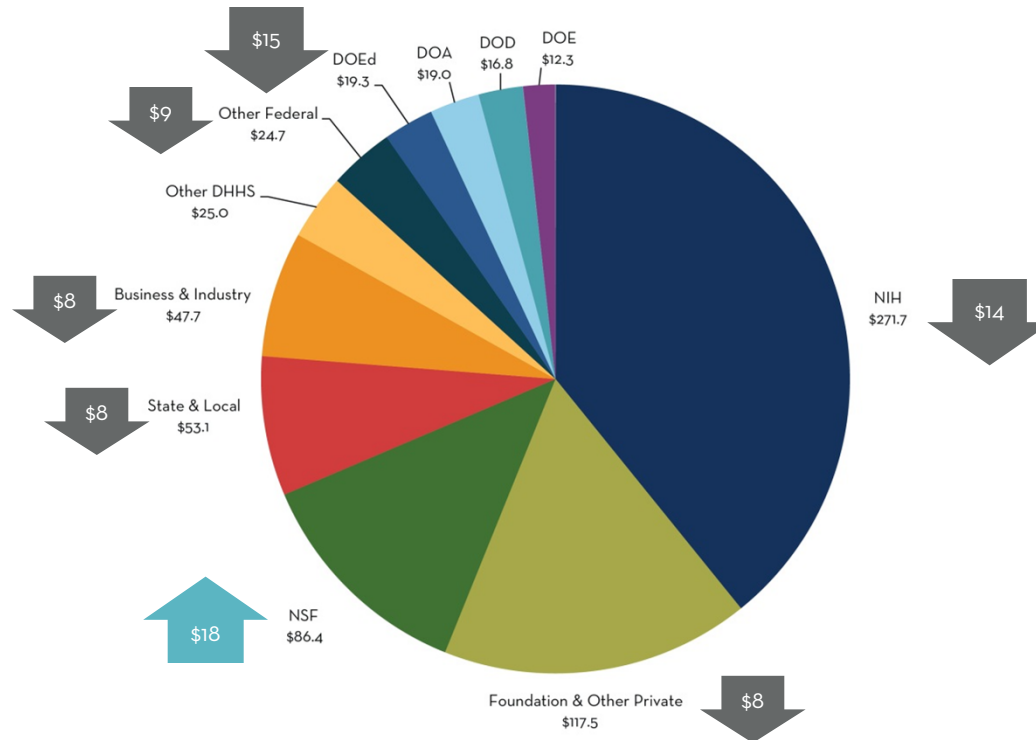


Dollar amounts represented in millions

RESEARCH STATISTICS

FY13 AWARDS BY SOURCE | \$693M

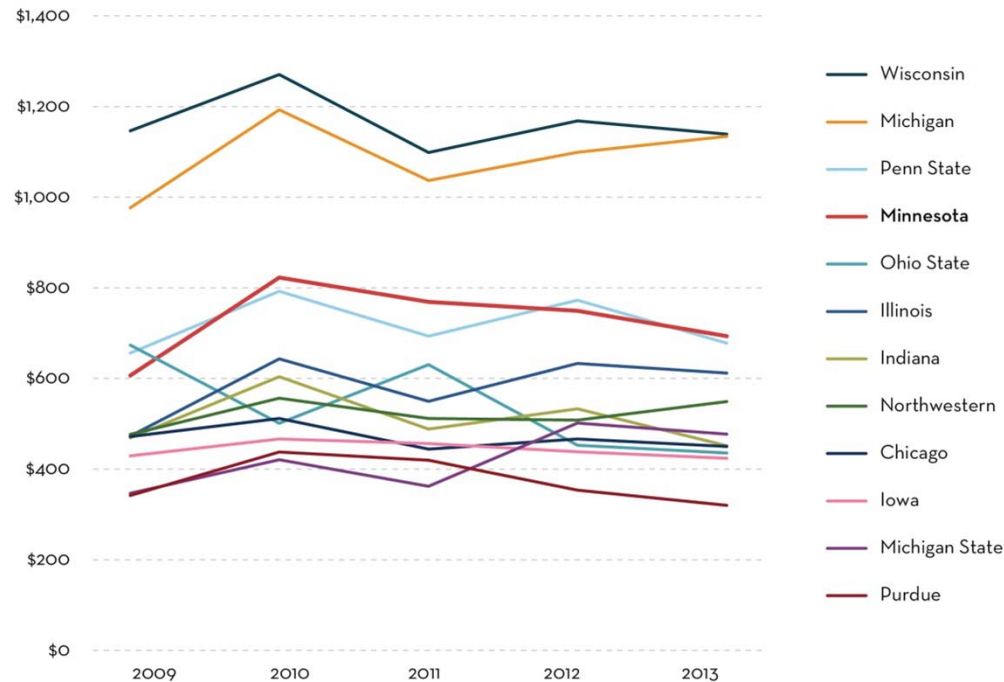
The sources of federal research funding have remained relatively constant, with NIH and NSF accounting for about 70 percent of the federal total and most sources showing a decline over fiscal 2012.



RESEARCH STATISTICS

CIC AWARD COMPARISON

Award totals remained consistent amongst the consortium of Big 10 universities that make up the Committee on Institutional Cooperation over the five year period covering the ARRA funding (2009 to 2013).



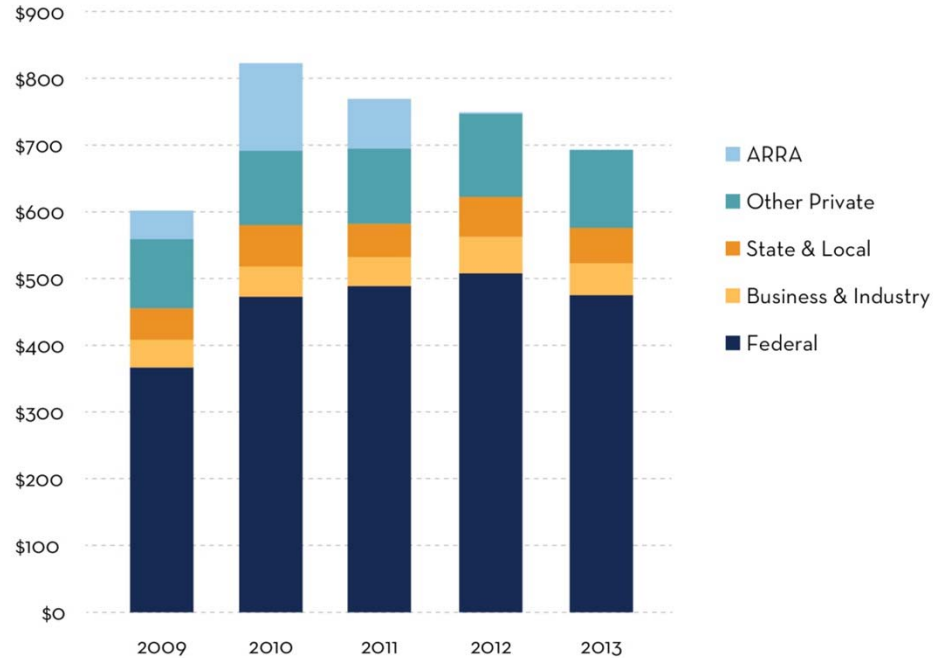
In fiscal 2013, Dr. Neaton and his team received two NIH awards totaling \$34.9M for his HIV study, involving 400 sites in 37 countries.

Findings have changed clinical practice guidelines globally, opened up new avenues for HIV researchers and improved the health of countless people.

RESEARCH STATISTICS

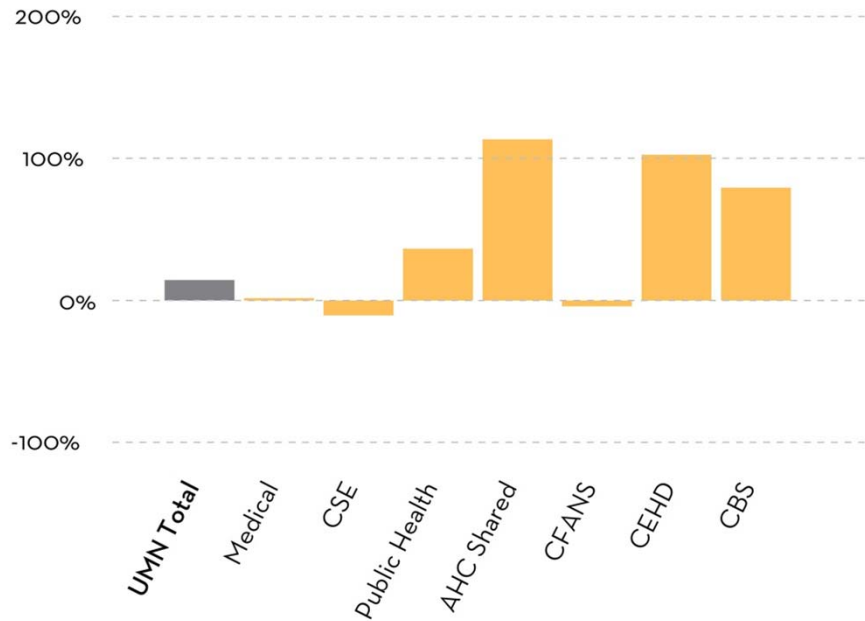
FIVE YEAR TRENDS

Over the five year period covering the ARRA funding (2009 to 2013), the university system grew its award funding 14 percent.



AWARD PERFORMANCE BY COLLEGE

Many colleges benefited from the economic stimulus funds, reflecting a positive percent change in their funding from 2009 to 2013. Colleges with fiscal 2013 award totals over \$15M are represented.



RESEARCH STATISTICS

TECHNOLOGY COMMERCIALIZATION

The university continued its strong performance and productivity in fiscal 2013 with nearly all metrics showing growth over the previous fiscal year. A record 14 startup companies were launched, topping the previous record set in fiscal 2012 when 12 startups were spun out.

	FY2009	FY2010	FY2011	FY2012	FY2013
Invention disclosures	244	255	250	321	331
MN-IP agreements	-	-	-	14	41
New U.S. patent filings	65	66	78	115	148
New licenses	44	67	76	71	91
Startups	3	8	9	12	14
Current revenue generating agreements	306	399	457	426	331
Gross revenues	\$95.2	\$83.8	\$10.1	\$45.7	\$39.47
Non-Glaxo revenues	\$8.7	\$8.6	\$10.1	\$10.74	\$12.48
Outgoing material transfer agreements	106	171	271	313	281

“[MN-IP] and other models ... promise to help foster university-industry partnerships and strengthen America’s economic competitiveness.”

WHITE HOUSE BLOG,
OFFICE OF SCIENCE AND TECHNOLOGY POLICY

R&D COMPARATIVE ANALYSIS

COMPARATIVE ANALYSIS

TOP 15 INSTITUTIONS

According to the 2012 NSF R&D expenditure survey (the most recent data available), the university remains among the elite public institutions, ranking ninth and posting over \$826M.

	NSF - 2012		CMUP - 2012	ARWU - 2013 (Shanghai)		
	U.S. Public	Expenditures	U.S. Public	World	U.S.	U.S. Public
Michigan	1	\$1,322,711	9 of 9	23	18	8
Wisconsin	2	\$1,169,779	9 of 9	19	17	7
Washington	3	\$1,109,008	8 of 9	16	14	5
UC San Diego	4	\$1,073,864	7 of 9	14	12	3
UC San Francisco	5	\$1,032,673	7 of 9	18	16	6
UCLA	6	\$1,003,375	9 of 9	12	10	2
North Carolina	7	\$884,791	9 of 9	43	30	16
Pittsburgh	8	\$866,638	8 of 9	61	39	24
Minnesota-Twin Cities*	9	\$826,173	8 of 9	29	21	11
Penn State	10	\$797,679	7 of 9	54	37	21
Ohio State	11	\$766,513	9 of 9	65	41	25
UC Berkeley	12	\$730,348	9 of 9	3	3	1
UC Davis	13	\$713,292	6 of 9	47	33	19
Florida	14	\$696,985	9 of 9	71	43	26
Texas A&M	15	\$693,421	6 of 9	101-150	53-67	32-42

*Total expenditures for all U of M campuses: \$849M
Dollar amounts represented in millions

November 2013 ■ NSF 14-303

Higher Education R&D Expenditures Remain Flat in FY 2012

by Ronda Britt¹

INFOBRIEF

NSF: NATIONAL CENTER FOR SCIENCE & ENGINEERING

TRANSFORMING RESEARCH

TRANSFORMING RESEARCH

EMERGING PRIORITIES

In July 2013, the OVPR reported the following information to the board, an emerging set of priorities that would further shape and strengthen our research enterprise.

- Recognize importance of managing change in higher education
- Enhance transdisciplinary public/private/non-profit partnerships
- Advance academic excellence
- Accelerate the transfer and utilization of knowledge for the public good
- Strengthen the research infrastructure
- Promote culture of serendipity

TRANSFORMING RESEARCH

TRANSDISCIPLINARY PARTNERSHIPS

THE TRIPLE HELIX



University



Business



Government

UNIVERSITY ECONOMIC DEVELOPMENT

This new office will expand the capacity of our current business relations operation and better align system-wide resources (see sample below) to present a unified front or “open door” to our external partners.

Convening economic development forums

- Center for Integrative Leadership
- University Metropolitan Consortium
- Center for Transportation Studies
- State and Local Policy Program
- Corporate Institute
- U of M Foundation

Supporting workforce development

- Center for Human Resources and Labor Studies
- Technological Leadership Institute
- Alumni Association
- Medical Industry Leadership Institute

Enabling global linkages

- Global Programs and Strategy Alliance
- Center for International Business Education and Research
- Economic Development Center
- Center for International Food and Agricultural Policy

Encouraging entrepreneurship

- Office for Technology Commercialization
- Business Development Services
- Regional Sustainable Development Partnerships
- Center for Entrepreneurship
- Community Economics
- Medical Devices Center

Providing research and technical resources

- Institute on the Environment
- Industrial Partnership for Research in Interfacial and Materials Engineering
- Institute for Engineering in Medicine
- Biotechnology Institute
- Molecular and Cellular Therapeutics
- Institute for Therapeutics Discovery and Development
- Midwest Center for Occupational Health and Safety
- Minnesota Technical Assistance Program
- Institute for Research in Marketing

TRANSFORMING RESEARCH

MnDRIVE: OUR TRIPLE HELIX

ADVISORY BOARD

Academia

Tom Fisher, U of M

Steve Polasky, U of M

Mahlon Delong, Emory U

U of M Foundation

Becky Malkerson, U of M Foundation

Industry

Mehmood Kahn, PepsiCo

Todd Fruchterman, 3M

Byron Hill, Honeywell

Larry Berger, Ecolab

Community

Margaret Anderson Kelliher, MN High Tech Association

Mark Tercek, Nature Conservancy



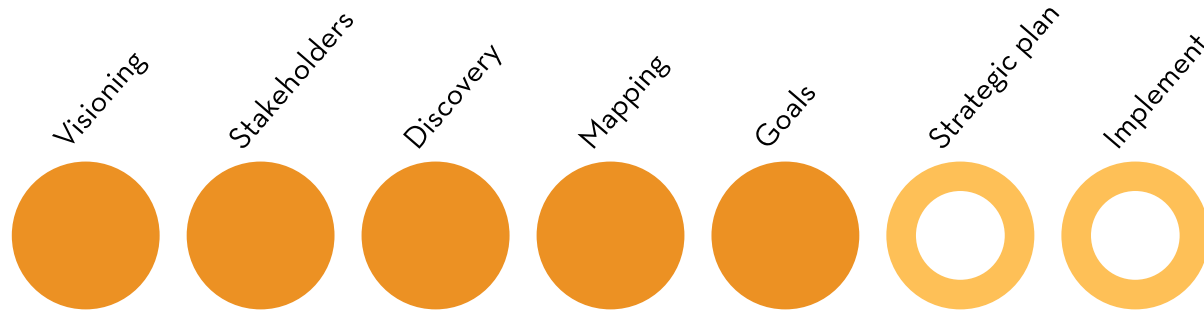
FIVE YEARS FORWARD
THROUGH COLLECTIVE INSPIRATION AND DISCOVERY

FIVE YEARS FORWARD

PLANNING PROCESS

In May 2013, OVPR, in consultation with the university and research community, embarked on a strategic planning process designed to bring increased focus, alignment and excellence for the university's research enterprise.

During this process, OVPR engaged close to 4,000 individuals on our five campuses and in our surrounding communities, representing 65 stakeholder groups.



SWOT ANALYSIS

Strengths

- Breadth and depth of disciplines
- Integration of research into undergraduate/graduate curricula
- Urban setting
- Valued by citizens of state
- Discipline/transdisciplinary strength areas: *biomedical sciences, cultural, energy/environment, food, global health, human rights, neuro behavior, comp sciences/engineering, quantitative behavior analysis*
- Exceptional leadership and faculty
- Technology transfer/IP policy

Opportunities

- Build on strong reputation/ranking – create a brand that differentiates
- Redefine research engine for the future – creating opportunities for faculty to come together and address more impactful issues affecting society
- Improve processes and technology efficiencies
- Increased collaborations, intellectual capacity sharing and pursue new partnership opportunities in private and public sectors
- Shared infrastructure, better digital measures
- Further advocating for reduced administrative burden
- Physical resources of the state
- Relationship with industry – potential to have big societal impacts

Weaknesses

- Space
- Managing core assets
- Real or perceived competition
- Proliferation of research centers
- Interdisciplinary connectivity
- U's limited external connectivity
- Tenure process impeding interdisciplinary collaborations
- U is siloed
- U slow, overly complex

Threats

- Decreasing and uncertain resources: government funding, budgetary support and loss of Glaxo funding
- Economic strain on U Mission
- Aging infrastructure
- Loss of talent – increased competition
- Changing landscape for land grant institutions
- Changing public sector needs for U research
- Changing demographics of faculty, students

FIVE YEARS FORWARD

VISION & CORNERSTONES

Feedback from the stakeholder groups, combined with the guidance of the OVPR leadership team, has resulted in a strategic plan that concentrates on four thematic areas in line with a central vision.



SUPPORTING GOALS

Specific plans are now being developed for each of the 16 goals that support the cornerstone themes.

Enhance research excellence	Advance transdisciplinary partnerships	Accelerate transfer of knowledge for the public good	Promote culture of serendipity
1a. Promote targeted initiatives where the university can demonstrate global preeminence.	2a. Develop metrics and incentives to motivate transdisciplinary research.	3a. Expand economic development and external engagement.	4a. Create networking tools, spaces and forums.
1b. Ensure high quality, state of the art research systems, capabilities and spaces.	2b. Provide funding and shared resources to implement partnerships.	3b. Showcase university research discoveries, capabilities and economic impact.	4b. Increase experiential research and learning opportunities among diverse disciplines.
1c. Grow and recruit more honorific award winning faculty.	2c. Increase prominence of international research.	3c. Increase informatics capabilities.	4c. Sustain an environment that nurtures creative innovation and discovery.
1d. Reduce faculty administrative burden.	2d. Reengineer public-private partnerships.	3d. Emphasize and promote entrepreneurship.	4d. Focus knowledge and innovation on solving society's most urgent and formidable challenges.

FIVE YEARS FORWARD

NEXT STEPS

Five Years Forward will be incorporated into the university's strategic plan, leads will be assigned from across the university system and stakeholders will be re-engaged to encourage participation and success.



FIVE YEARS FORWARD

LEADERSHIP

To help ensure focus and alignment, the OVPR has invited leaders and experts from many fields across the university to help provide guidance as we carry out our strategic plan.

Executive steering committee

Karen Ashe, Medical School

David Fisher, Law School

Tom Fisher, College of Design

Bin He, College of Science and Engineering; Medical School

Brian Herman, Office of the Vice President for Research

Al Levine, Academic Affairs & Provost

Richard Pfutzenreuter, University Budget & Finance

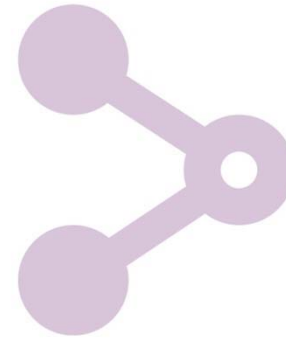
Alex Rothman, College of Liberal Arts

Carissa Schively Slotterback, Humphrey School of Public Affairs

Dave Tilman, College of Biological Sciences

Jakub Tolar, Medical School

Pamela Wheelock, University Services



[RESEARCH.UMN.EDU/FORWARD](https://research.umn.edu/forward)

“The measure of intelligence is the ability to change.”

ALBERT EINSTEIN

**Bringing people together in new ways, fostering discoveries
and making our world a better place.**

RESEARCH.UMN.EDU/FORWARD



UNIVERSITY OF MINNESOTA

Driven to DiscoverSM

APPENDIX

DATA SOURCES

[FY13 AWARDS BY COLLEGE & CAMPUS](#)

[FY13 AWARDS BY SOURCE](#)

[FIVE YEAR TRENDS](#)

[AWARD PERFORMANCE BY COLLEGE](#)

[TECHNOLOGY COMMERCIALIZATION](#)

[OVPR Data Services](#)

CIC AWARD COMPARISON

[Committee on Institutional Cooperation
\(researchadmin.iu.edu/cic.html\)](#)

Note: Maryland, Rutgers and Nebraska were omitted due to non-reporting of data to the CIC.

[WebCASPAR \(webcaspar.nsf.gov\)](#)

ARTICLES AND QUOTES

[Dr. James Neaton \(global.umn.edu/honors/age/10_Neaton.html\)](#)

[White House Blog \(wh.gov/1oOww\)](#)

[NSF: InfoBrief \(nsf.gov/statistics/infbrief/nsf14303/nsf14303.pdf\)](#)

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](#)

[\(mup.asu.edu/research2012.pdf\)](#)

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.