

**Date:** May 21, 2010  
**Subject:** The Role of Public Universities in Performing Federally Funded Research

As we focus attention on the Great Recession’s impact on state budgets and the resulting sharp declines in state support for public universities that have necessitated tuition increases and budget cuts for administrative and instructional budgets, it is important that we also consider the potential consequences of the Recession for the research mission. Flat or declining federal research funding alongside steep declines in state support pose a threat to public higher education’s research enterprise, which carries an outsized role in producing the new knowledge underpinning the solutions of tomorrow. This brief addresses recent trends in both federal and state support for research.

*The Role the Nation Plays in Funding Academic Research*

The National Science Foundation’s (NSF) 2010 Science and Engineering Indicators<sup>1</sup> Report highlights the role that federal support plays in research performed at institutions of higher education: **the federal government provided 60 percent (\$31.2 billion) of all funds expended on Research and Development (R&D) by institutions in 2008.** Although growth in federal spending on R&D has been steady, averaging 3.1 percent per year in constant dollars over the past 20 years (slightly ahead of Gross Domestic Product growth), it has been decreasing or flat in very recent years. As the 2010 Science and Engineering Indicators report details, federally funded higher education research and development expenditures increased only 0.2 percent from 2007 to 2008, after two years of slight decline. This trend is expected to continue despite the one-time provision of \$18.3 billion for new research spending in the American Recovery and Reinvestment Act (ARRA) of 2009. In fact, **federal agency-reported academic science and engineering obligations<sup>2</sup> peaked in 2004 and have declined by 7 percent since then.**

*The Role Public Institutions Play in Performing Academic Research*

In 2008, the top 100 institutions, by total amount expended on R&D, accounted for 80 percent of all such spending, and included 70 public institutions (that together carry out 53 percent of all R&D spending) and 30 private institutions (26 percent of all spending)<sup>3</sup>. **In total, public institutions accounted for more than twice as much (68 percent) R&D expenditure from all sources as private institutions (32 percent) in 2008.**

Below are the top 20 public institutions as measured by total *federal* dollars expended on R&D. These institutions accounted for over half of all R&D spending by public institutions in 2008. Note that in the top twenty; only Berkeley, Georgia Tech and University of Texas at Austin do not have medical schools.

Institution	2008 Fed Expend	Overall Rank	Public Rank
University of Washington	\$614,000,000	2	1
University of Michigan, all campuses	\$593,000,000	3	2
University of California–San Diego	\$491,000,000	6	3

<sup>1</sup> <http://www.nsf.gov/statistics/seind10/>

<sup>2</sup> Obligations are all federal funds awarded to institutions during a fiscal year, including those that will be expended in future years. Note that NSF includes “all obligations for research and development (R&D); R&D plant; facilities and equipment for science and engineering (S&E) instruction; fellowships, traineeships, and training grants (FTGs); and general support for S&E.”

<sup>3</sup> SOURCE: National Science Foundation, Division of Science Resources Statistics (DSRS), Survey of Research and Development Expenditures at Universities and Colleges: FY 2008.

Institution	2008 Fed Expendis	Overall Rank	Public Rank
University of Wisconsin–Madison	\$474,000,000	8	4
University of California–San Francisco	\$473,000,000	9	5
University of California–Los Angeles	\$472,000,000	10	6
University of Pittsburgh, all campuses	\$456,000,000	12	7
University of Colorado, all campuses	\$437,000,000	14	8
Pennsylvania State University, all campuses	\$407,000,000	15	9
University of North Carolina–Chapel Hill	\$373,000,000	19	10
University of Minnesota, all campuses	\$364,000,000	20	11
Ohio State University, all campuses	\$335,000,000	23	12
University of Texas – Austin	\$324,000,000	25	13
University of Alabama – Birmingham	\$303,000,000	27	14
Georgia Institute of Technology	\$281,000,000	30	15
University of Arizona	\$278,000,000	31	16
University of California – Davis	\$269,000,000	33	17
University of Illinois – Urbana Champaign	\$267,000,000	34	18
University of California – Berkeley	\$249,000,000	39	19
Texas A&M University	\$246,000,000	40	20

Recent Funding Trends of Concern for Public Research Institutions

Although public institutions conduct the majority of federally sponsored academic research in the US, private institutions rely more heavily on federal funding, which constitutes 72 percent of all private institution research funds compared to 55 percent for public institutions<sup>4</sup>. This is important because as state budgets have been severely contracted during the Great Recession, state funds for research have been dwindling. **The retraction of state funding for higher education is expected to have a disproportionate effect on the research conducted at public institutions**, where state and local government support play a bigger role through the direct funding of R&D, as well as through institutional funding.

Percent of R&D Expenditures by Source of Funds, FY 2008

	Federal	State/Local	Institutional	Industry	Other
Private	72%	2%	12%	6%	9%
Public	55%	9%	24%	6%	7%

All major public research institutions are performing invaluable research across the country. That the Great Recession may exacerbate existing trends for waning federal and state support for research at public institutions is an alarming possibility that warrants attention.

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<sup>4</sup> SOURCE: NSF, DSRIS, Survey of Research and Development Expenditures at Universities and Colleges: FY 2008.