



Federal Demonstration Partnership Meeting

January 6, 2014

STAR Metrics

Marietta L. Harrison, PhD

Professor of Medicinal Chemistry
Associate Vice President for Research

STAR Metrics: Data Consistency

STAR Metrics: Data Consistency Issues

- Job Classifications
 - Guidance posted on STAR Metrics website

Issues for Discussion

- Data contributed by Universities
 - Sponsored research only
 - Non-sponsored research
 - * Cost sharing on grant awards
 - * Federal and state appropriation funds for agriculture research
 - * General funds separately budgeted to support research
 - * Gifts designated to support research
- Differential indirect cost rates

STAR Metrics Job Classification
Technician/Staff Scientist
Faculty
Research Analyst/Coordinator
Post Graduate Researcher
Undergraduates
Graduate Students
Clinicians
Research Support

CIC and UMETRICS

Measuring the Results of Research Investments: Opportunities for CIC STAR METRICS Institutions

CIC: Committee on Institutional Cooperation (Big Ten + Univ. of Chicago)

Joint effort by University VPRs and Scholarly Researchers

Goal: to inform the regional, national and international debate by developing open and transparent measures and methods to quantify scientific, economic and social impact that can be used and trusted by policy makers.

CIC UMETRICS Initiative

- Roy Weiss, University of Chicago, convener
- March 2013 workshop hosted by CIC
 - CIC VPs for Research
 - CIC Science of Science Policy Researchers
 - NIH, NSF, USDA, Sloan Foundation, AAMC, AAU and APLU as observers
- All institutions agreed to contribute STAR Metrics data for analysis

Federal Research Funding: A Detailed Analysis of Expenditures at 8 CIC Universities



This report documents current federal research funding and expenditures at eight major research institutions – Michigan State University, Northwestern University, Ohio State University, Purdue University, University of Chicago, University of Michigan, University of Minnesota and University of Wisconsin-Madison.

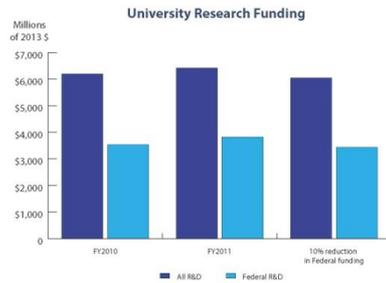
The report is based on actual financial and payroll records for the 8 institutions for 2011 and 2012 as well as published government data for 2010, 2011 and 2012.

It also projects the likely result of a 10% across the board decrease in federal funding.

SCOPE

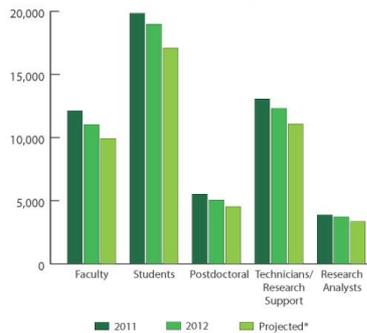
Research funding represents an injection of external funds to the university and the academic community.

- Researchers at these eight universities generated over \$6.1 billion in research activity in 2011 (the latest year for which figures are available).
- \$3.47 billion of that research & development was funded by the federal government.
- A 10% reduction of federal research funding from 2011 levels would translate into a reduction of research funding by over \$350 million.



EMPLOYMENT

Number of Individuals Employed by Federal Research Funding



Scientific research both creates new scientific knowledge and trains the next generation in the scientific method. The research enterprise also employs many technicians, clinicians and other support staff.

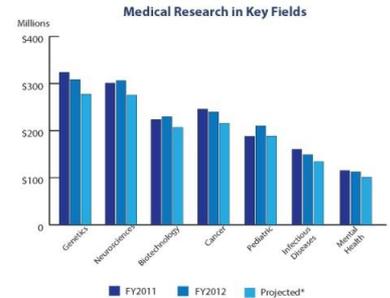
- In 2012, more than 50,000 individuals (equivalent to more than 22,000 FTE positions) were directly employed at these eight universities by federal research funding.
- A reduction of 10% in federal funding relative to 2012 levels would reduce the number of individuals working on federally funded research by almost 5,000.
- Most of the people affected would be graduate and undergraduate students; the second most common category would be technicians and research support.

Julia Lane and Rebecca Rosen American Institutes for Research

SCIENCE

Federal funding comes from many different agencies, but the greatest number and volume comes from the National Institutes of Health: about \$1.6 billion for these eight institutions in FY2012.

- A 10% reduction in NIH funding relative to 2012 levels would reduce the funding for biomedical research at these universities by about \$160 million.
- There would be \$30.9 million less for research in genetics and \$30.6 million less for research in the neurosciences.
- There would be \$23.9 million less for cancer research and \$21 million less for research in pediatric diseases.

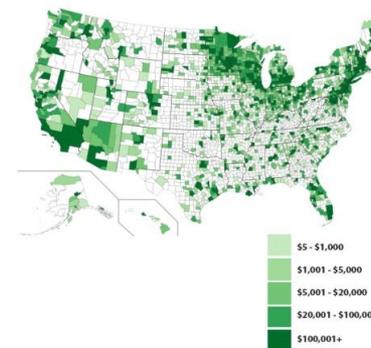


EXPENDITURES

The production of science requires the purchase of scientific equipment and technology as well as collaboration with private/public research organizations.

- In 2012, federal research funding supported the purchase of over \$866 million of equipment, supplies and subcontracted services.
- Vendors in almost 1,700 counties do business with these researchers at eight universities.
- In 2012, vendors in each of more than 300 of those counties derived combined revenues of over \$100,000.
- A 10% decrease in funding would reduce revenues by a combined total of more than \$78 million in those 300 counties.
- The top ten states home to these vendors spanned the entire country, ranging from California to New York, from Texas to Michigan; in high technology industries, producing optical equipment and high-end manufacturing parts.

National Distribution of Expenditures



*Projections reflect a 10% decrease relative to the most recent year for which data is available.

For more information about methodology and data sources: Contact Barbara McFadden Allen (bmallen@staff.cic.net), Bruce Weinberg (Weinberg.27@osu.edu), or Julia Lane (jlane@air.org).

FEDERAL RESEARCH FUNDING:

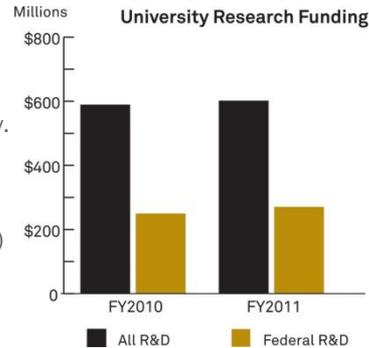
A Detailed Analysis of Expenditures at Purdue University

This report documents current federal research funding and expenditures at Purdue University. The report is based on actual financial and payroll records for the University for 2010, 2011 and 2012 as well as published government data for 2010, 2011 and 2012.

SCOPE

Research funding represents an injection of external funds to the university and the academic community.

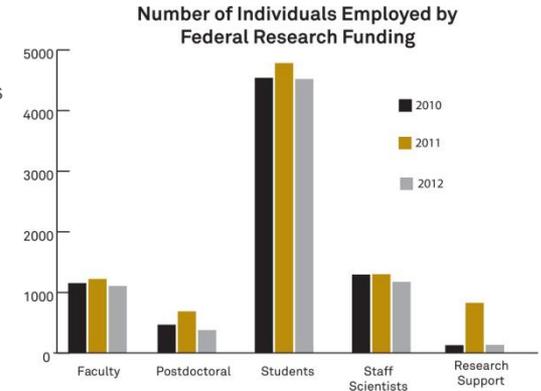
- Researchers at Purdue University generated over \$601 million in research activity in 2011 (the latest year for which figures are available.)
- \$270 million of that research & development was funded by the federal government.



EMPLOYMENT

Scientific research both creates new scientific knowledge and trains the next generation in the scientific method. The research enterprise also employs many technicians, clinicians and other support staff.

- In 2012, more than 7,340 individuals (equivalent to more than 2,050 FTE positions) were directly employed at Purdue University by federal research funding.



EXPENDITURES

The production of science requires the purchase of scientific equipment and technology as well as collaboration with private/public research organizations.

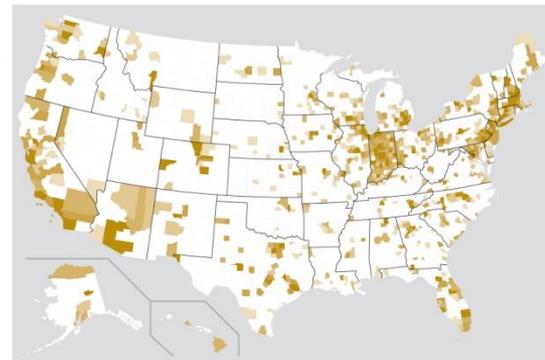
- Purdue University research generated over \$14 million in expenditures in Indiana counties alone.

- In 2012, federal research funding to Purdue University supported the purchase of almost \$96 million of supplies and subcontracted services from the nation as a whole.
- Vendors in over 700 US counties do business with researchers at Purdue University.
- In 2012, vendors in each of more than 145 of those counties derived combined revenues of over \$60,000.

Regional Distribution of Expenditures

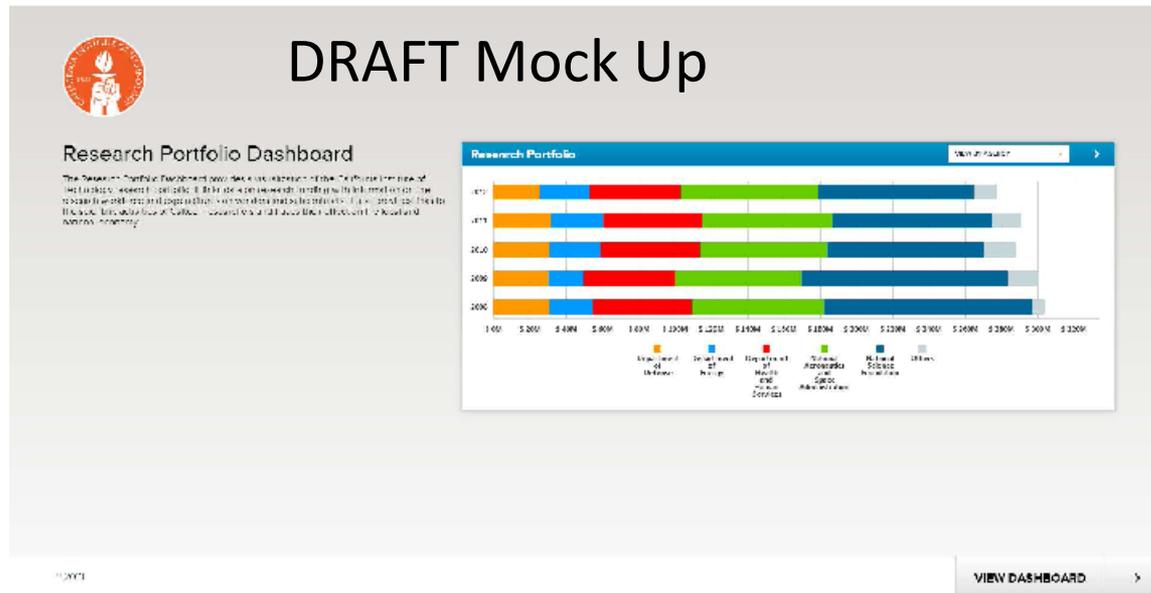


National Distribution of Expenditures



Dashboard Project using Cal Tech Data

Julia Lane and Rebecca Rosen, American Institutes for Research



STAR Metrics: toward uniform job classifications

The human resource data, which along with federal award data form the basis of the STAR Metrics analysis is obtained from the databases of each participating university. A critical aspect of the employment data is the classification of jobs into eight discrete categories. The assignment of university employee classifications to a given category is performed by the STAR Metrics team and returned to the universities for their review. Universities have the option to change the assignments using the STAR Metrics portal or make assignments manually before submitting future employment data.

A comparison of STAR Metrics reports from various universities revealed a non-uniformity and ambiguity in the categories and nomenclature universities use to classify employees. This no doubt stems from the varied human resource databases used on campuses throughout the United States. In order to provide uniformity, the initial STAR Metrics guidelines were revised slightly and a recommendation made that using these revised definitions for job classifications, the universities manually assign the employment classifications in their databases to one of the eight STAR Metrics job classification categories.

STAR Metrics: toward uniform job classifications

Job Classification Guidelines

Following each of the eight STAR Metrics job classification categories listed below are guidance for placement of individuals into that category and examples of university employee classifications that are appropriate for the category.

Technician/Staff Scientist

All personnel who do not fit in another defined category and who are contributing to a research project (i.e., involved in supporting/generating or analyzing data)

- all technical staff including animal technicians, machinists, mechanics
- engineers, statisticians, machinists, mechanics (non-faculty)
- research associates/scientists
- all non-faculty PhD/MS/BS scientists (employees, not post-graduate trainees or students)
- IT staff working directly on the project
- high school students
- lab managers

STAR Metrics: toward uniform job classifications

Job Classification Guidelines

Following each of the eight STAR Metrics job classification categories listed below are guidance for placement of individuals into that category and examples of university employee classifications that are appropriate for the category.

Faculty

All individuals holding an academic professorial rank

- tenure/tenure track
- clinical
- research
- visiting professors
- adjunct professors
- librarians
- academic specialists

STAR Metrics: toward uniform job classifications

Job Classification Guidelines

Following each of the eight STAR Metrics job classification categories listed below are guidance for placement of individuals into that category and examples of university employee classifications that are appropriate for the category.

Research Analyst/Coordinator

This category is for individuals involved in large-scale clinical trials/studies who serve as analysts/managers/ coordinators/facilitators.

- research analysts
- study coordinators
- IACUC coordinators
- clinical coordinator
- clinical specialist
- research specialist
- lab coordinator

Post Graduate Research

All individuals holding terminal degrees (PhD, MD) who are in temporary training status

- postdoctoral
- medical residents/interns/fellows
- clinical fellowships

STAR Metrics: toward uniform job classifications

Job Classification Guidelines

Following each of the eight STAR Metrics job classification categories listed below are guidance for placement of individuals into that category and examples of university employee classifications that are appropriate for the category.

Undergraduate Students

Students earning baccalaureate/other degrees including fulltime, part time, summer research assistants, work study

Graduate Students

Students earning advanced degrees

- graduate students (part time, full time)
- medical/dental/nursing/students

Clinicians

All non-faculty health care professionals

- nurses (non-faculty)
- dietitians (non-faculty)
- medical technicians
- nutritionists
- social workers
- physical therapists
- clinical psychologists
- dental hygienists

STAR Metrics: toward uniform job classifications

Job Classification Guidelines

Following each of the eight STAR Metrics job classification categories listed below are guidance for placement of individuals into that category and examples of university employee classifications that are appropriate for the category.

Research Support

Individuals in this category should be examined closely, as most administrative research support is funded through university cost recovery (institutional support/indirect costs). However, there are instances where business/media/marketing/administrative personnel are legitimate/required costs, usually associated with large-scale center-level projects.

- operation managers/managing directors
- regulatory staff
- appropriate administrative/clerical staff
- outpatient support