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Your Strategic Partner in Social Science Research

Federal Funding for Academic Research

What is its value?

Warren A. Brown, Sr. Research Associate
CISER/Program on Applied Demographics

New York State Data Center Meeting
Albany, NY
September 13, 2018

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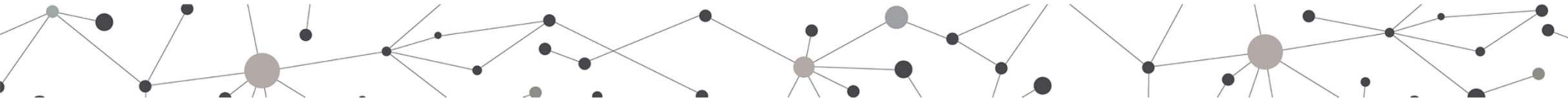
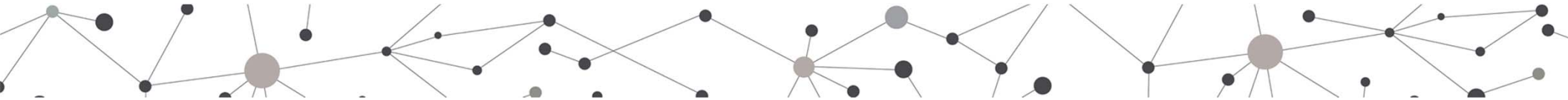
What is the value of government sponsored research performed at universities and colleges?

- Congressional Critics and Proponents
- Developing the Metrics to Evaluate Research Outcomes
- Census Bureau Teams Up with Universities
- Objective Evidence and Outcomes



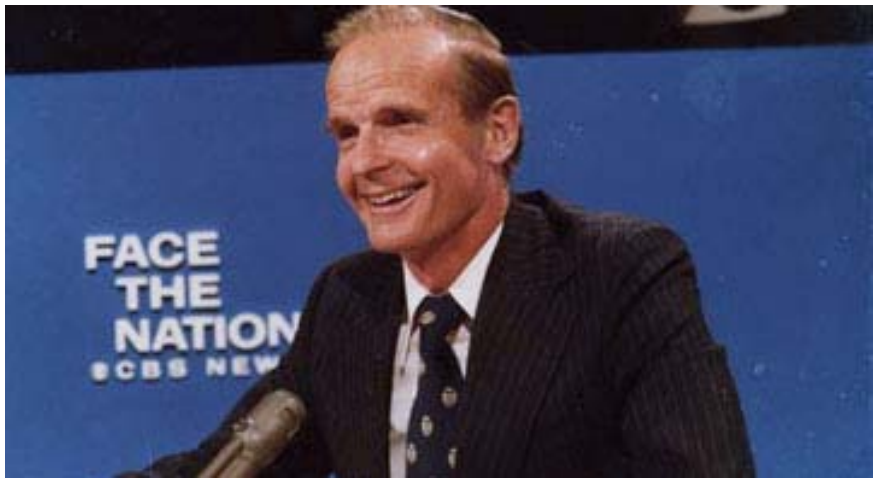
Congressional Critics and Proponents

- Sen. William Proxmire's Golden Fleece Awards
- Golden Goose Award
- Rep. Lamar Smith Battles the NSF

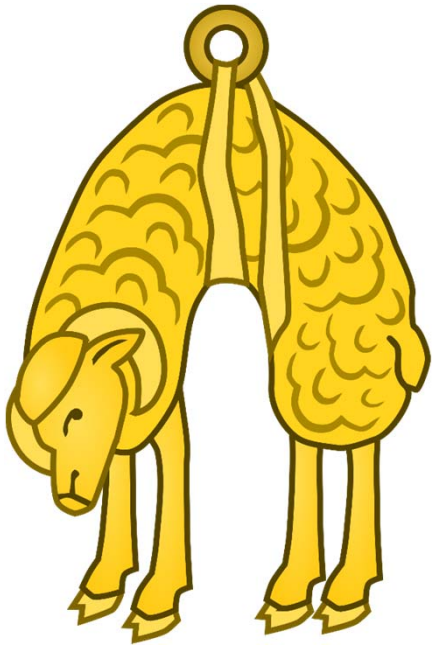


Sen. Proxmire's Golden Fleece Award

Sen. William Proxmire

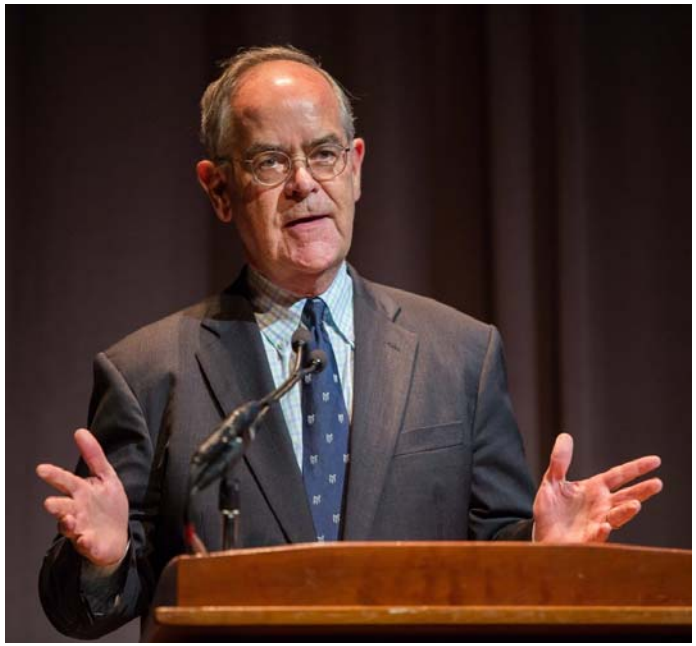


The Golden Fleece



Golden Goose Award

Rep. Jim Cooper



Golden Goose

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Rep. Lamar Smith Battles the NSF

Representatives Eddie Bernice Johnson (D-TX) and Lamar Smith (R-TX)

"It's easy to learn to ride a bicycle…"

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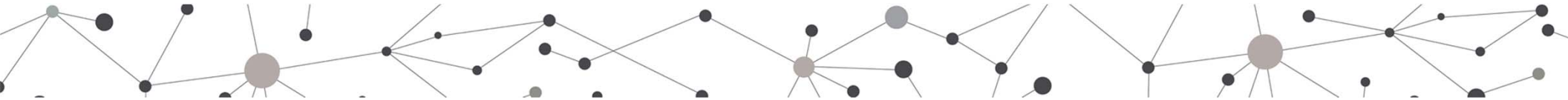
Developing the Metrics to Evaluate Research Outcomes

- STAR METRICS
- UMETRICS
- IRIS
- IMI



STAR METRICS

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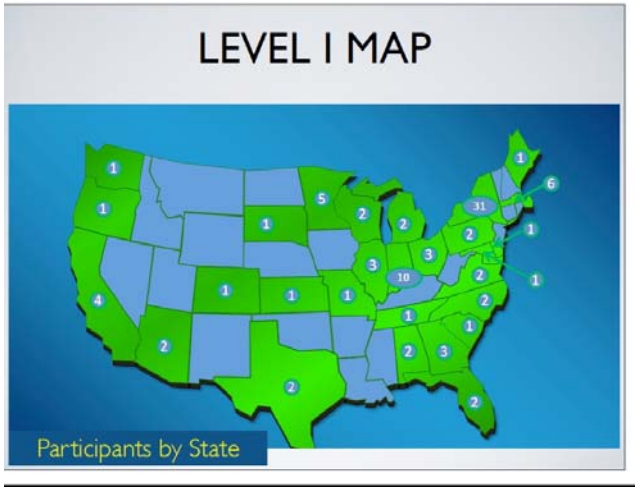
Science economics: What science is really worth

Spending on science is one of the best ways to generate jobs and economic growth, say research advocates. But as Colin Macilwain reports, the evidence behind such claims is patchy.

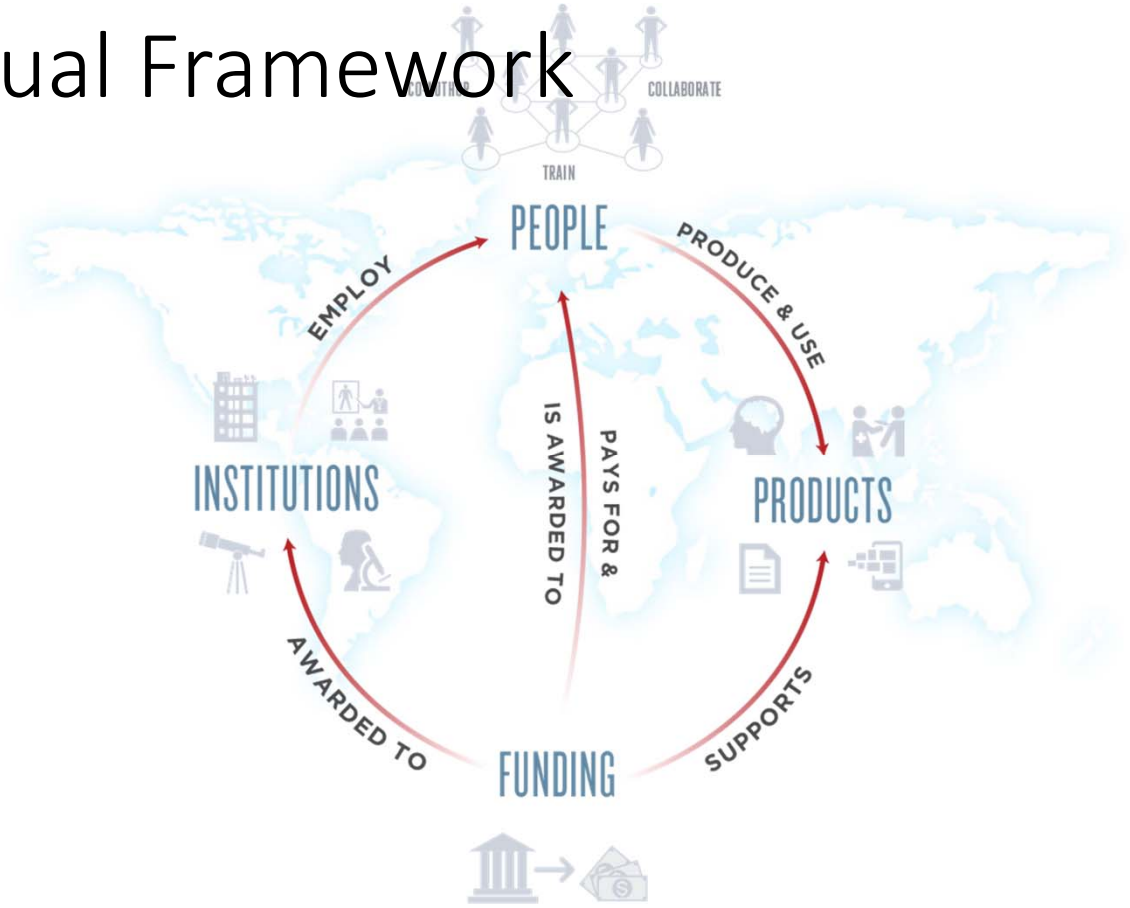
Colin Macilwain

STAR METRICS

- National program: White House led inter-agency initiative, now housed at NIH
- Broad participation: >100 research orgs (45% of NSF/NIH funding)
- Unique data: Project level data on internal financial and HR data on expenditures from federal grants
- Low burden / cost: uses algorithms & existing data
- Theoretically grounded: Builds on microfoundations



Conceptual Framework



Empirical Framework

- Level 1: Document science inputs: the workforce and equipment expenditures supported by federal funding
- Level 2: Develop an open **automated** data infrastructure and tools that will enable us to document and analyze the inputs, outputs, and outcomes resulting from federal investments in science

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UMETRICS

Julia Lane

BIG ACADEMIC ALLIANCE

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Home > Research > UMETRICS

UMETRICS

Universities: Measuring the Impacts of Research on Innovation, Competitiveness, and Science

What are the results of investments in research? Why should taxpayers support universities? How do universities affect the regional economy? These are questions that are beginning to be answered within the Big Ten Academic Alliance (and more broadly in the research university community) thanks to an effort incubated in the Big Ten Academic Alliance called UMETRICS.

UMETRICS

- Private initiative to use STAR METRICS data from 15 major research universities that comprise the Committee on Institutional Cooperation (CIC) to analyze:
  1. Impact of Science
  2. Structure of research workforce
  3. Optimize research

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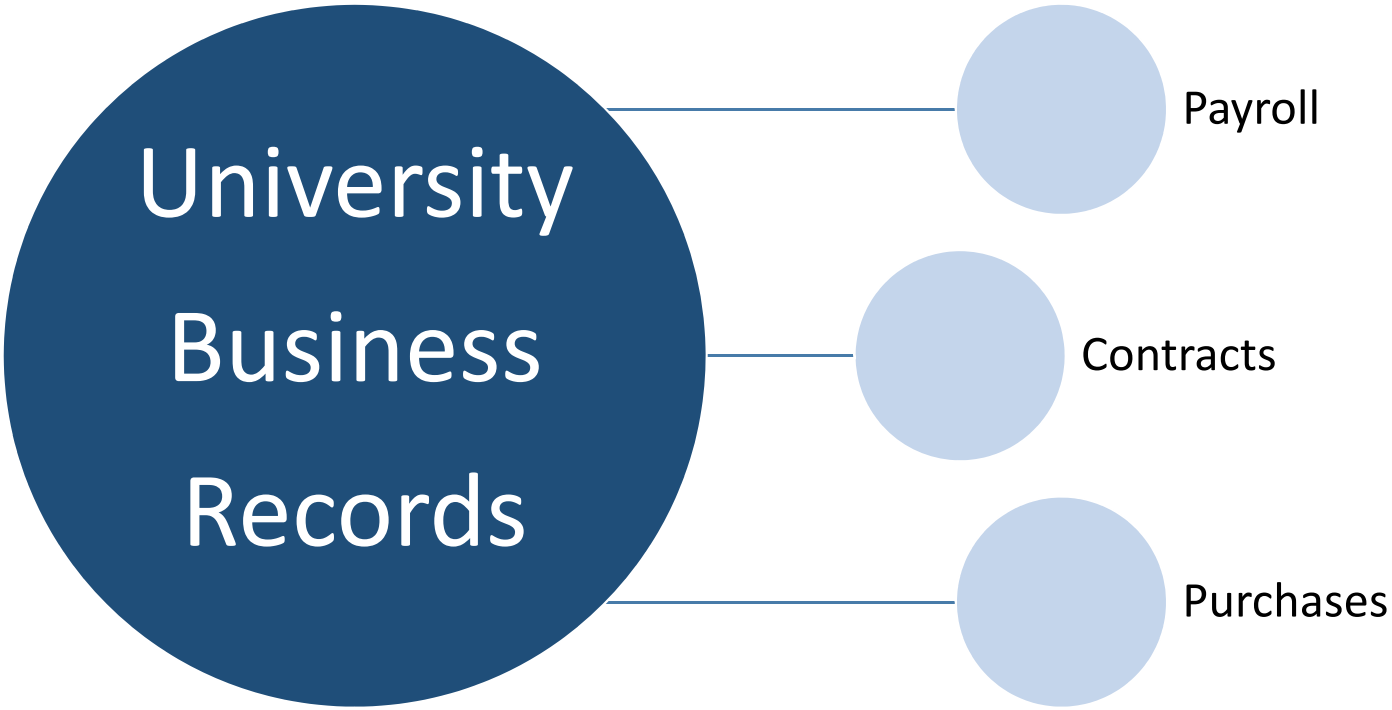
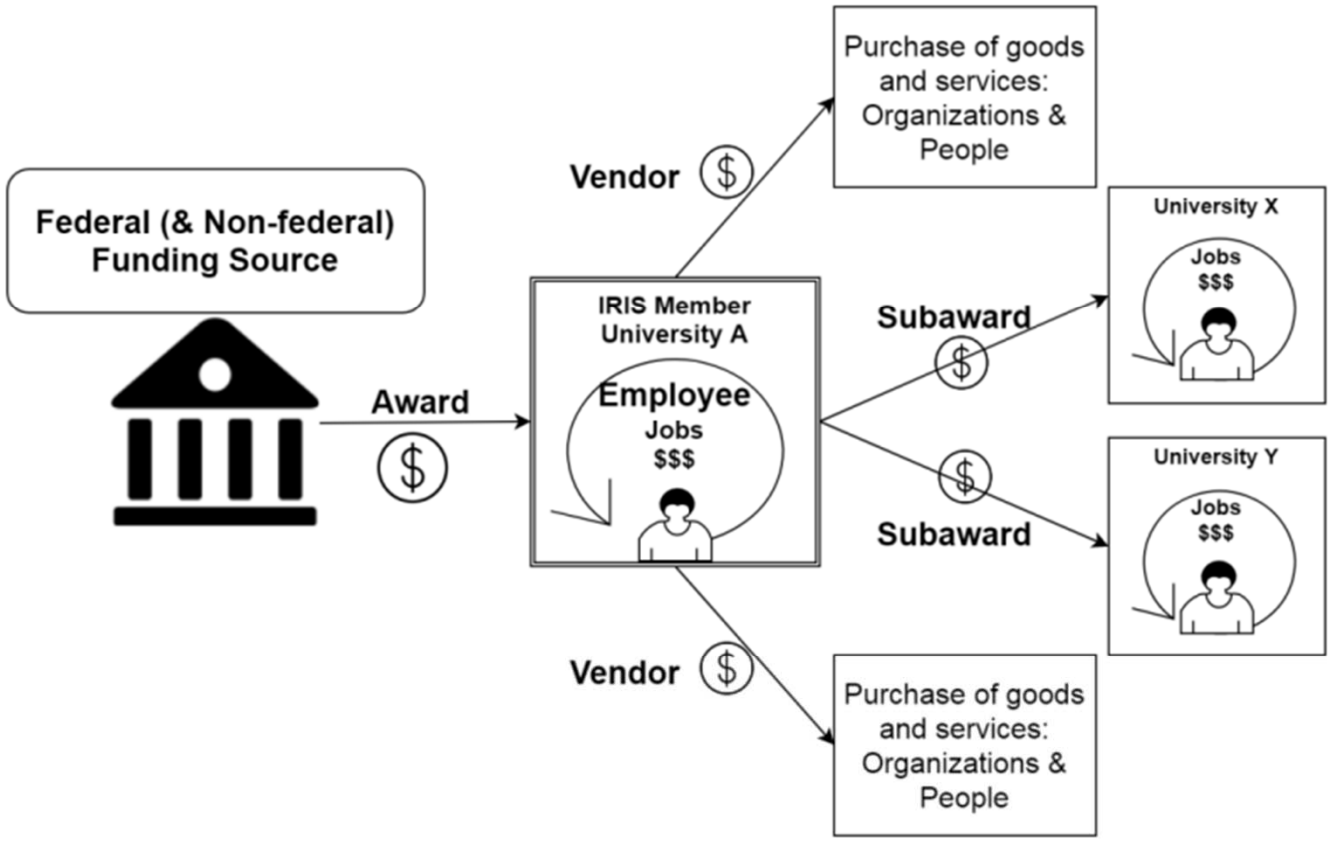
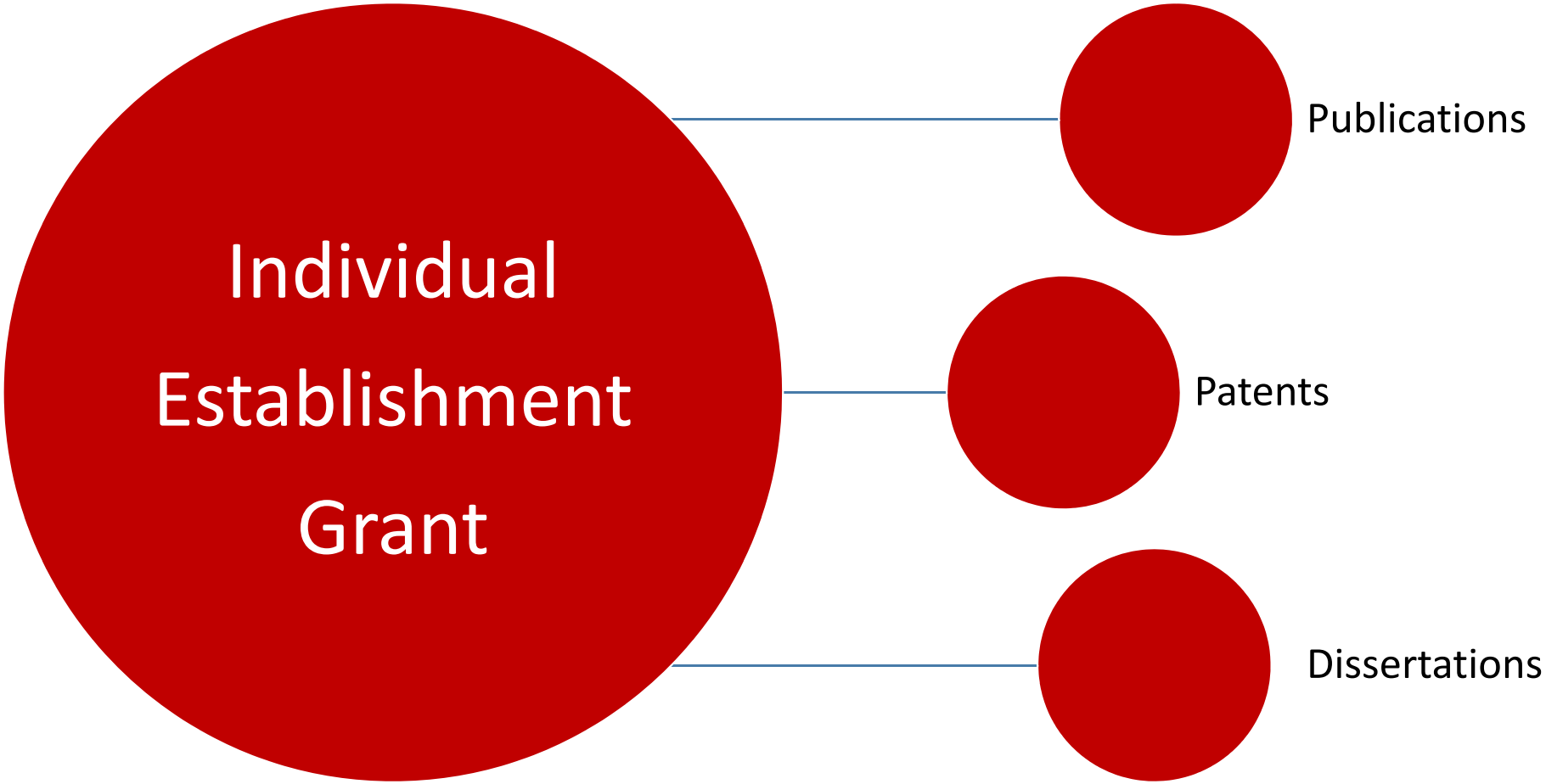
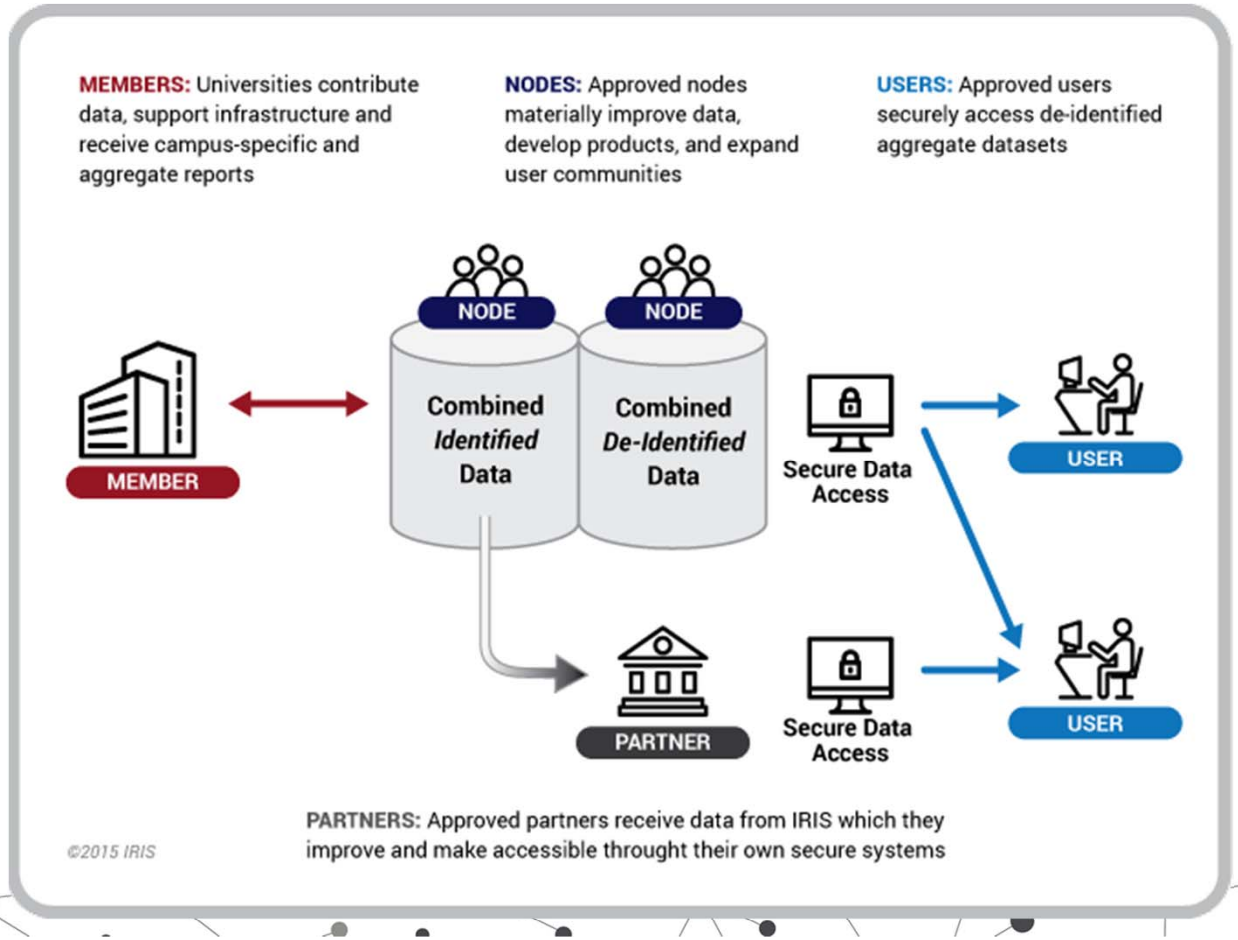
IRIS Members: 31 Major Research Universities


University Business Records
Payroll
Contracts
Purchases


Federal (& Non-federal) Funding Source
Award
$
IRIS Member University A
Employee
Jobs
$$$
Vendor
$
Purchase of goods and services: Organizations & People
Subaward
$
University X
Jobs
$$$
Subaward
$
University Y
Jobs
$$$
Vendor
$
Purchase of goods and services: Organizations & People


Individual Establishment Grant
Publications
Patents
Dissertations

How IRIS Works



Innovation Measurement Initiative's (IMI) UMETRICS Data

U.S. Census Bureau

Linking UMETRICS Data to:

- Person data:
  - Decennial Census
  - American Community Survey
  - LEHD
- Establishment data:
  - Business Register
  - Longitudinal Business Database
  - LEHD

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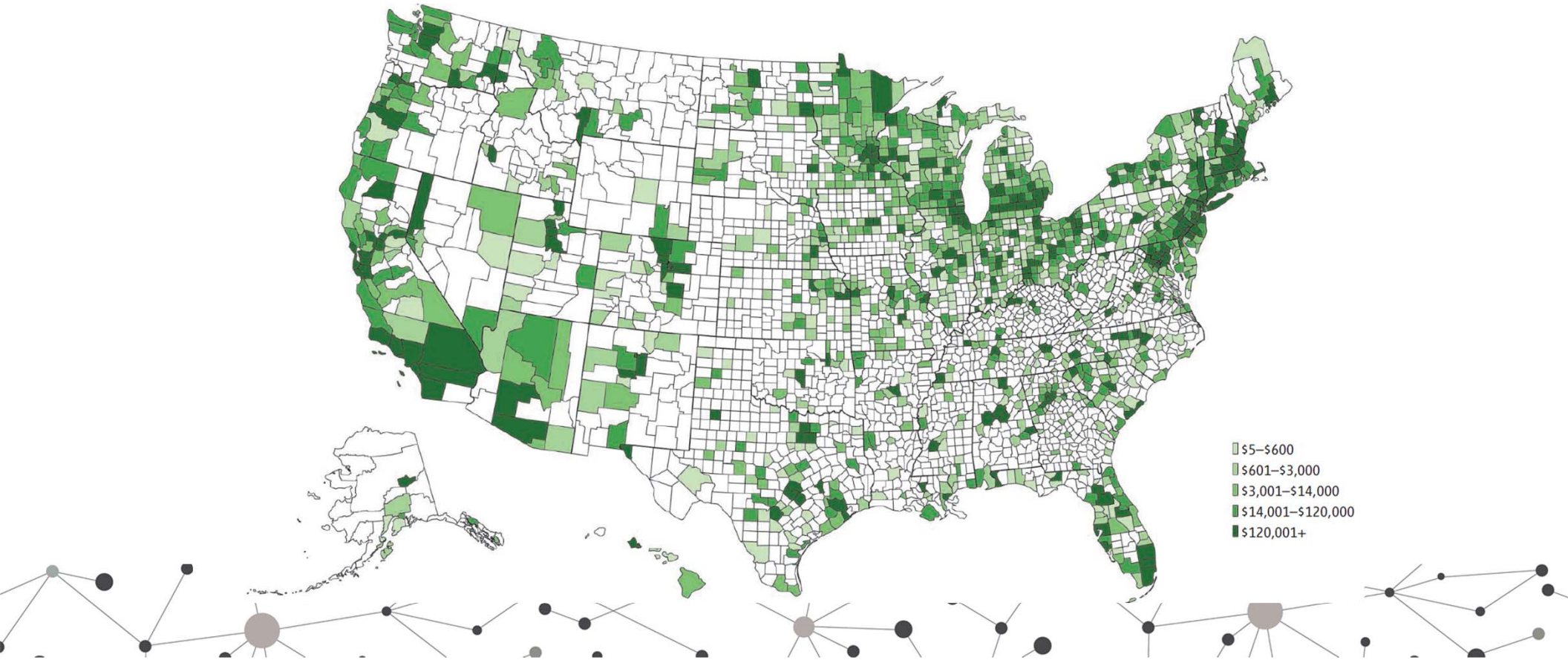
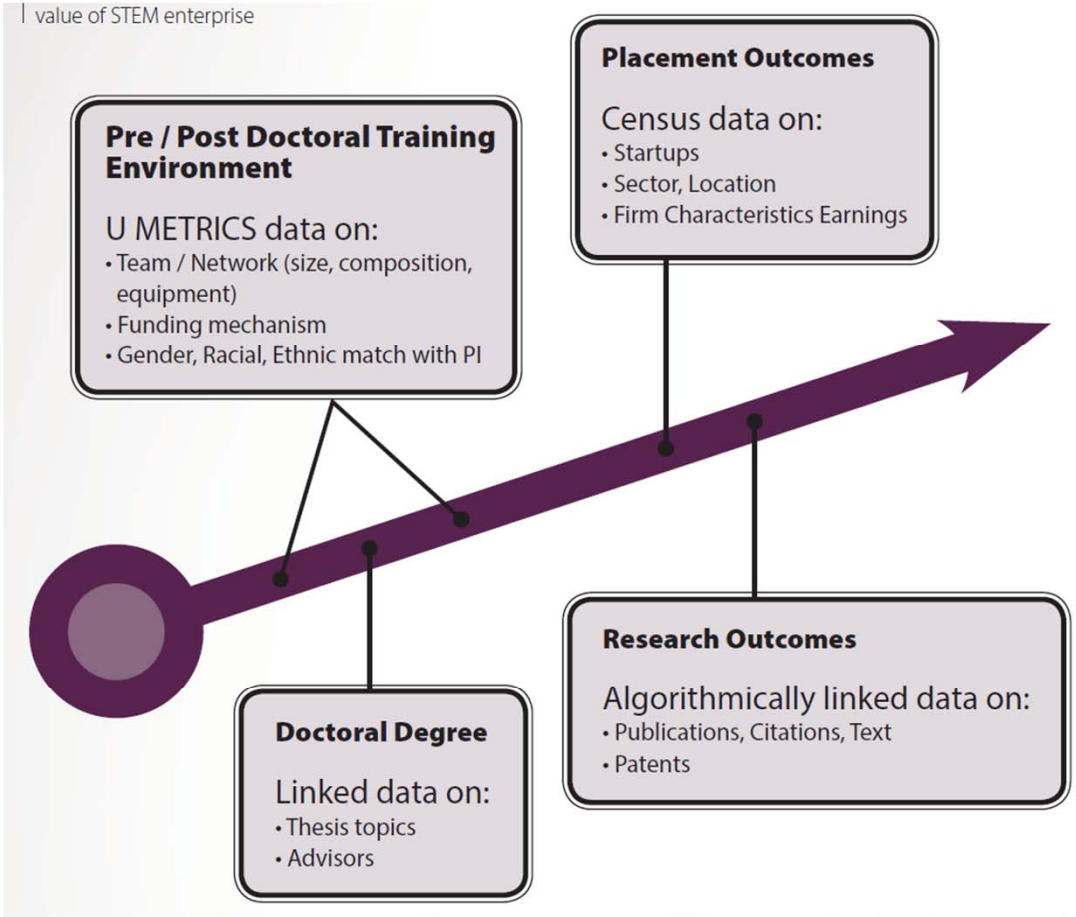
Distribution of vendor and sub-award expenditures




value of STEM enterprise
Pre / Post Doctoral Training Environment
U METRICS data on:
• Team / Network (size, composition, equipment)
• Funding mechanism
• Gender, Racial, Ethnic match with PI
Placement Outcomes
Census data on:
• Startups
• Sector, Location
• Firm Characteristics Earnings
Doctoral Degree
Linked data on:
• Thesis topics
• Advisors
Research Outcomes
Algorithmically linked data on:
• Publications, Citations, Text
• Patents

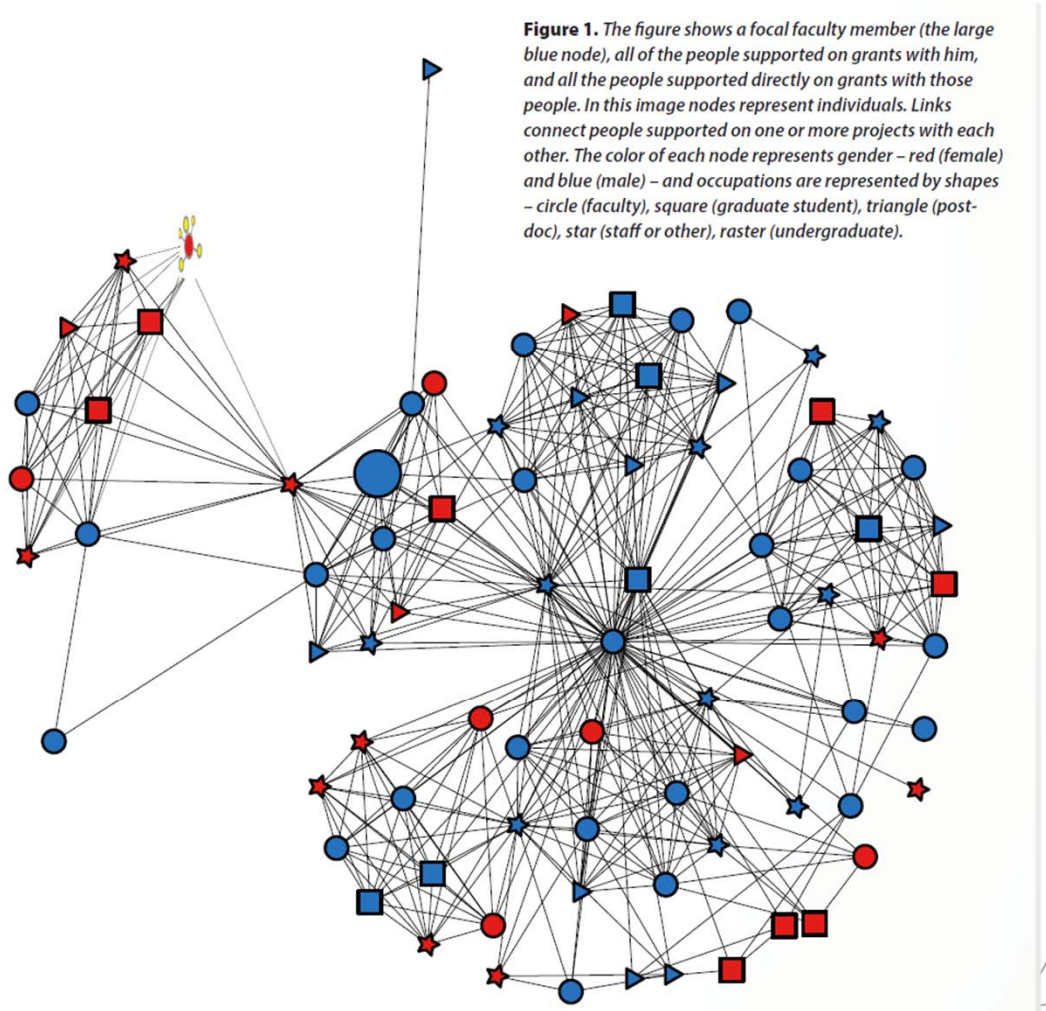


Figure 1. *The figure shows a focal faculty member (the large blue node), all of the people supported on grants with him, and all the people supported directly on grants with those people. In this image nodes represent individuals. Links connect people supported on one or more projects with each other. The color of each node represents gender – red (female) and blue (male) – and occupations are represented by shapes – circle (faculty), square (graduate student), triangle (post-doc), star (staff or other), raster (undergraduate).*

About PAD
About
Activities
People
Contact

Data
NY Counties
School districts
Census 2010

Maps
Census 2010 Atlas
ACS 2010-2014 Atlas
Reference maps

Publications
NY County profiles
Webinars
Other publications

Resources
At Cornell
About NY
Other resources

Cornell Program on Applied Demographics

About PAD

The Program on Applied Demographics (PAD) brings skills in demographics, economics, statistics, data gathering and data analysis together to provide a variety of organizations with data, information and advice. PAD works closely with the New York State Department of Labor, the U.S. Census Bureau and other organizations to assist them in their activities. Examples of PAD's activities can be found here.

PAD is part of the Cornell Population Center, a university-wide program serving 96 affiliates from 24 different departments and is housed in the College of Human Ecology at Cornell University.

Being part of Cornell University gives PAD easy access to a world of further expertise. It also provides an environment that can handle different kinds of grants and other types of funding and cooperation.

Cornell University is home to one of the U.S. Census Research Data Centers (RDC) nationwide. The RDC, housed at CISER, provides secure access to confidential microdata from a number of administrative and survey data sources. These are invaluable resources to help understand various demographic processes.

Data Services

- Cornell Program on Applied Demographics
  - https://pad.human.cornell.edu/
- CISER Data Services
  - https://ciser.cornell.edu/data/