Research Analytics: Where do I start?

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Intro & Opening Comments

What weeks/months of data analysis looks like…

The Research Enterprise at a Glance

615 patents issued	**2,753** invention disclosures	**#6** NASA-funded activity
#1 top producer of Fulbright U.S. Scholars	**537** licenses and options for university inventions	**Top 20** in R&D expenditures among public universities

BY THE NUMBERS

No. 1
ASTRONOMY & ASTROPHYSICS
R&D Expenditures

No. 2
WATER RESOURCES
in the U.S. (No. 6 in the world)

No. 3
HIGH HISPANIC-ENROLLMENT IN RESEARCH ACTIVITY
in U.S. Institutions

No. 6
NASA-FUNDED ACTIVITY
among public universities

No. 7
PHYSICAL SCIENCES
R&D Expenditures

ENTREPRENEURSHIP (as of FY23)

2,753 invention disclosures
knowledge development that can change the world

537 licenses & options
for university inventions

615 patents issued
Ranked no. 28 among worldwide universities granted U.S. utility patents

135 startups launched
commercializing UArizona inventions

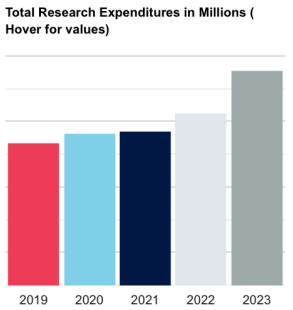
$1.61B in economic output
from commercialization activities between FY17-FY21

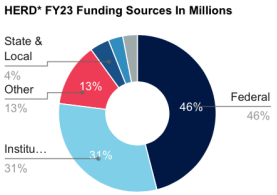
LAND-GRANT MISSION

With offices in all 15 counties, UArizona Cooperative Extension is critical to our land-grant

TOP 20 IN R&D EXPENDITURES

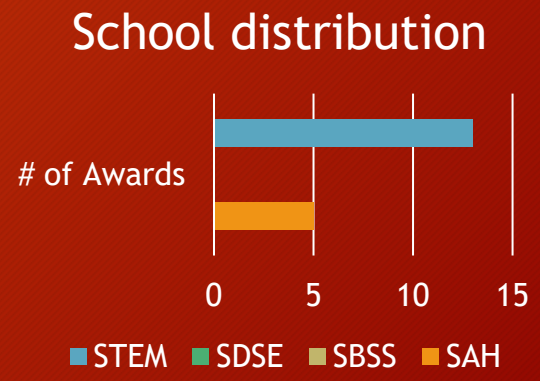
(AMONG PUBLIC UNIVERSITIES)





Diné College

- 36 applications submitted
- 23 funded
- 13 not funded
- Funding success rate: 64%
- Value of Applications Submitted: $30,337,016
- Value of Applications that were Funded: $12,798,142
- Average award: $556,441



Identifying the initial need

- We all start from the same place: a leader wants an answer to a question that requires data

- Examples:
  - # of proposals and awards – by PI/Department/College
  - Success rate of submitted proposals - “win rate”

  - What are your examples?

Where to start?

- What do you already have? Are you collecting the data in some fashion?
- What kinds of reports already exist at your institution?
- What does your institution need, and do you have influence in defining that?

Who is asking, and why?

- Why do they need the information?
- What does their request look like (are they asking the right question)?
- Who else might need to know – about the request, or the results?

Access Needs

- What data to you have/need access to?
- Who else might have access to get the data?
- Do you need to follow a process to get appropriate access?
- Depending on your organization, this may be the hardest part.

Who else might be involved?

- Who cleans the data?
- Who updates the data and how?
- Who else might you work with to get data/write reports/share output

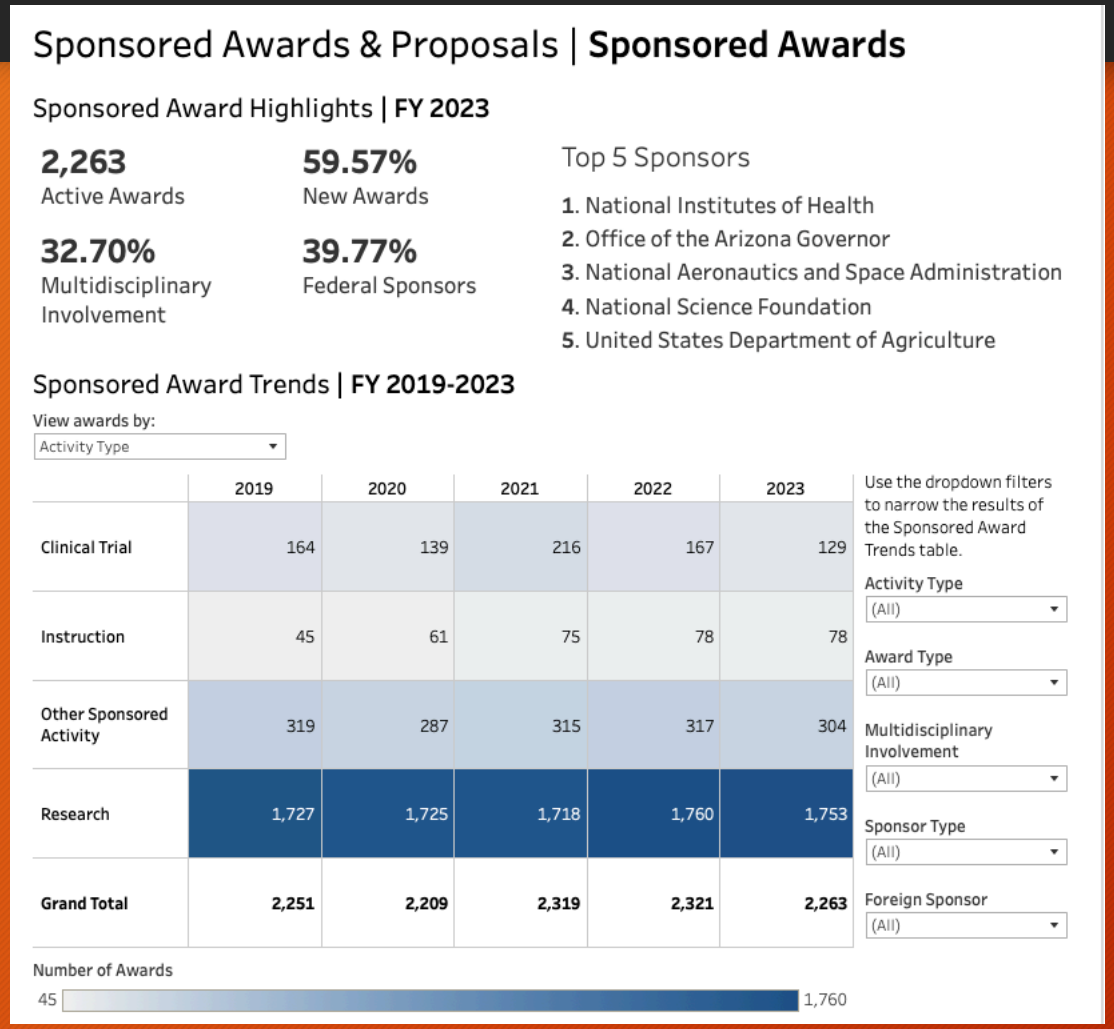
Other needs

- Can data help shorten processes?
- Can data help you anticipate needs?
  - Staffing/resources
  - Planning
  - Turnaround time
- How does data help you do your job?

Tools

- Excel: it's more powerful than you think!
- Tableau Public: free public version to use & share, lots of available training
- Power BI: part of the Microsoft suite(O365), but also a free version
- Your eRA system
- Federal agency tools – NIHReporter, USASpending.gov, HERD, etc
- Airtable – allows sharing of databases via cloud (free version)

Tableau Example



Sponsored Awards & Proposals | **Sponsored Awards**

Sponsored Award Highlights | **FY 2023**

2,263
Active Awards

59.57%
New Awards

32.70%
Multidisciplinary Involvement

39.77%
Federal Sponsors

Top 5 Sponsors

1. National Institutes of Health
2. Office of the Arizona Governor
3. National Aeronautics and Space Administration
4. National Science Foundation
5. United States Department of Agriculture

Sponsored Award Trends | **FY 2019-2023**

View awards by: Activity Type

	2019	2020	2021	2022	2023
Clinical Trial	164	139	216	167	129
Instruction	45	61	75	78	78
Other Sponsored Activity	319	287	315	317	304
Research	1,727	1,725	1,718	1,760	1,753
Grand Total	**2,251**	**2,209**	**2,319**	**2,321**	**2,263**

Use the dropdown filters to narrow the results of the Sponsored Award Trends table.

Activity Type (All)

Award Type (All)

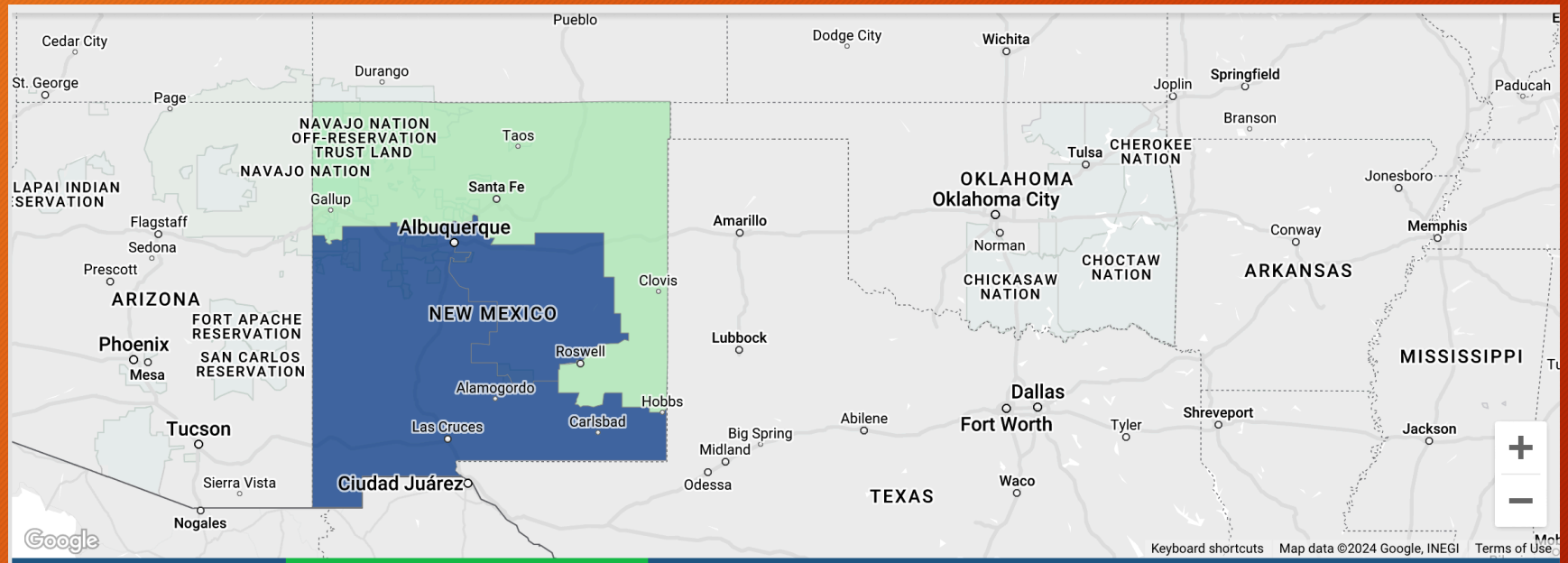
Multidisciplinary Involvement (All)

Sponsor Type (All)

Foreign Sponsor (All)

Number of Awards
45 1,760

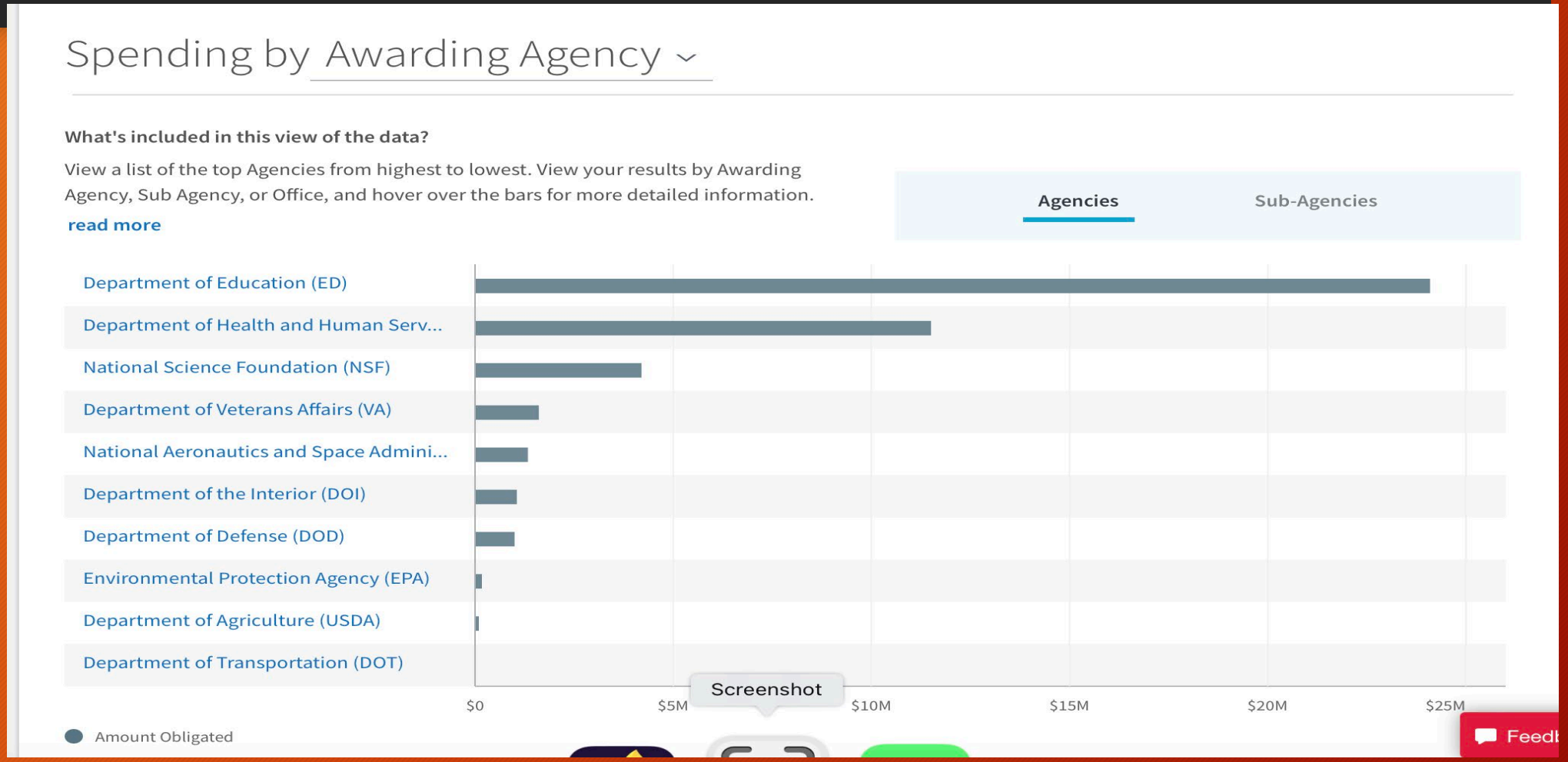
NIH Reporter



T Act Project	Year	Sub	Principal Investigator(s)/ Project Leader(s)	Organization	Fiscal Year	Admin IC	Funding IC	FY Total Cost by IC	Similar Projects
Electroconvulsive therapy amplitude titration for improved clinical outcomes in late-life depression									
5R33MH125126-04			ABBOTT, CHRIS C	UNIVERSITY OF NEW MEXICO HEALTH SCIS CTR	2024	NIMH	NIMH	$619,767	View
2/4 Deciphering Mechanisms of ECT Outcomes and Adverse Effects (DECODE)									
5R01MH128692-02			ABBOTT, CHRIS C	UNIVERSITY OF NEW MEXICO HEALTH	2023	NIMH	NIMH	$509,998	View

Screenshot

USASpending.gov



What will Chat GPT tell you?

How do tools help get beyond the basics?

- Spotting trends & patterns
- Automation
- Regular sharing to leadership, others
- Reaching back into data collection & integrity

Your Questions?