



**MONTANA**  
UNIVERSITY SYSTEM

# MUS Research and Economic Development

March 2022



OCHE – Academic, Research, and Student Affairs



**Retained R1 designation and  
became the largest university by  
R&D expenditure in the region.**

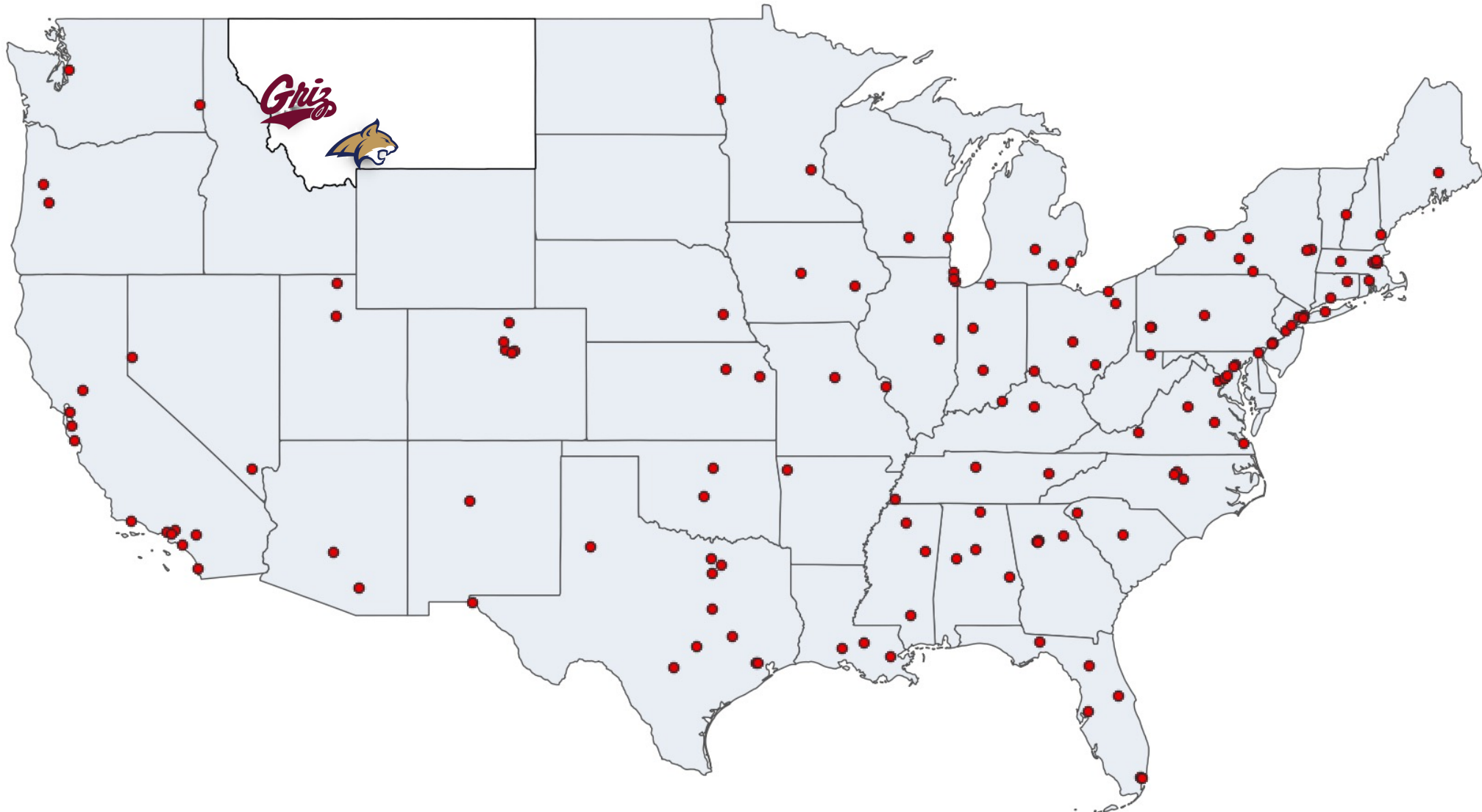




**Designated R1 for the first time**  
after doubling research activity  
in six years.



# 2022 Carnegie “Very High Research” Institutions

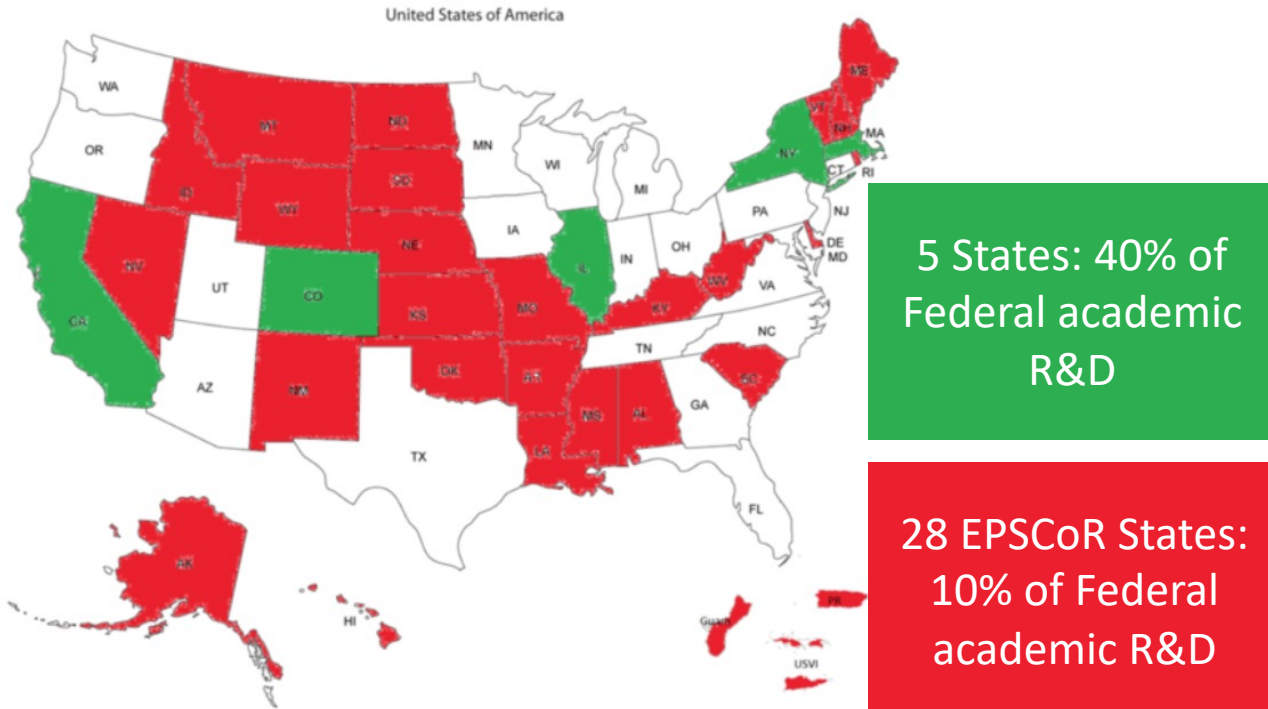


# What makes an R1?

- R&D expenditures in science and engineering
- R&D expenditures in non-science and engineering fields
- R&D expenditures per tenure track faculty
- Science and engineering research staff (post-docs and non-faculty researchers with doctorates)
- Research doctorates conferred in each of:
  - ❖ Humanities
  - ❖ Social Sciences
  - ❖ Science and Engineering
  - ❖ Other fields (e.g. business, education, etc.)



# Expanding the Geography of Innovation



Source: NSF; Lawson; EPSCoR

- Starting in 1978, the Federal government established EPSCoR and IDeA programs to broaden participation in research.
- Montana was an original EPSCoR state and still benefits greatly from the program.
- Federal legislation proposes to increase the share of overall federal R&D distributed through EPSCoR / IDeA.
- Our EPSCoR / IDeA programs bring research opportunities to students and faculty at every institution in the state.





Montana INBRE is a collaborative network of Montana-based universities, colleges, and research institutions that invests in the state's biomedical research capacity and workforce pipeline. Montana INBRE aims to:

- **Position Montana** as a national leader in biomedical research by supporting research in areas impacting health and economic opportunity
- **Address health challenges** found in the state by building research collaborations with rural and Native communities
- **Strengthen Montana's workforce pipeline** by broadening education and training opportunities that lead to lucrative, health-enhancing careers

**\$78M**  
**Awarded**  
Since 2001

**439%**  
Cumulative  
**ROI**

**480**  
Peer-Reviewed  
**Publications**

# The Network



## Research

- **Over \$420 million** in new research funding generated by Montana INBRE participants

## Education

- **Student Programs** have funded, impacted and trained **over 4,300 students** at institutions across Montana since 2001
- **Student Programs have included** over **450** tribal college students in cutting-edge research projects, awarded **12** Native American graduate fellowships, and funded **two** Native American post-doctoral fellowships

## Outreach

- **The Health Education and Research Bus** mobile laboratory and outreach facility transports community-based health education and research resources to all corners of the state





# NSF EPSCoR IN MONTANA

Since 1980, NSF EPSCoR has supported the development and implementation of 7 Track-1 grants in Montana. NSF EPSCoR has played an important role in enhancing research capacity and competitiveness for Montana, supporting innovative education for development of Montana's STEM workforce, and linking science outcomes to business opportunities and solutions for pressing issues.

## NSF EPSCoR IMPACT in MONTANA | 2011-2021



**\$38M**

Grants  
Awarded



**\$14.4M**

Co-funding  
Awarded



**394**

Publications



**30**

New Faculty  
Hires

# EPSCoR Education



The spectrUM Discovery Area, UM's hands-on science center, was seeded with NSF EPSCoR funding in 2006 and has since grown to serve an estimated 100,000 visitors annually.



# EPSCoR Research



Montana State University graduate and undergraduate students begin the process of packing up a drone after a flight on the Upper Clark Fork River. The drone carries the team's hyperspectral imaging system, which is used to identify algal blooms and estimate water quality parameters.

# EPSCoR Outreach



The Montana Girls STEM Collaborative began in 2012 as an outreach program of Montana NSF EPSCoR. The program is designed to share STEM programs and resources while building collaborations that inspire girls and youth from underrepresented audiences.



# Montana NASA EPSCoR & Montana Space Grant Consortium



Director: Dr. Angela Des Jardins

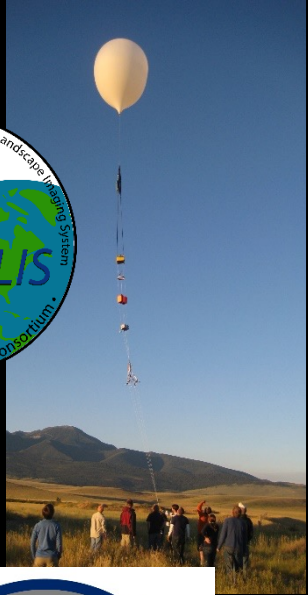
- Current funding \$1,250,000 – 1,700,000/year (EPSCoR) and \$800,000 /year (Space Grant)
- 170 student awards per year (\$1000-\$3000+)
- Montana does very well in NASA EPSCoR, in the top five EPSCoR jurisdictions (25 total) for funds received
- Together, offers paid student research opportunities at every higher education institution in the state
- Together, offers funded faculty professional development annually at every institution

# What are the student opportunities?



Attend a workshop  
or win a travel award

Fly an experiment to  
the edge of space



Share excitement for space



Build satellites



Intern locally or at a  
NASA Center

Work locally on STEM research



# Grants and Undergraduate Research at Montana Western

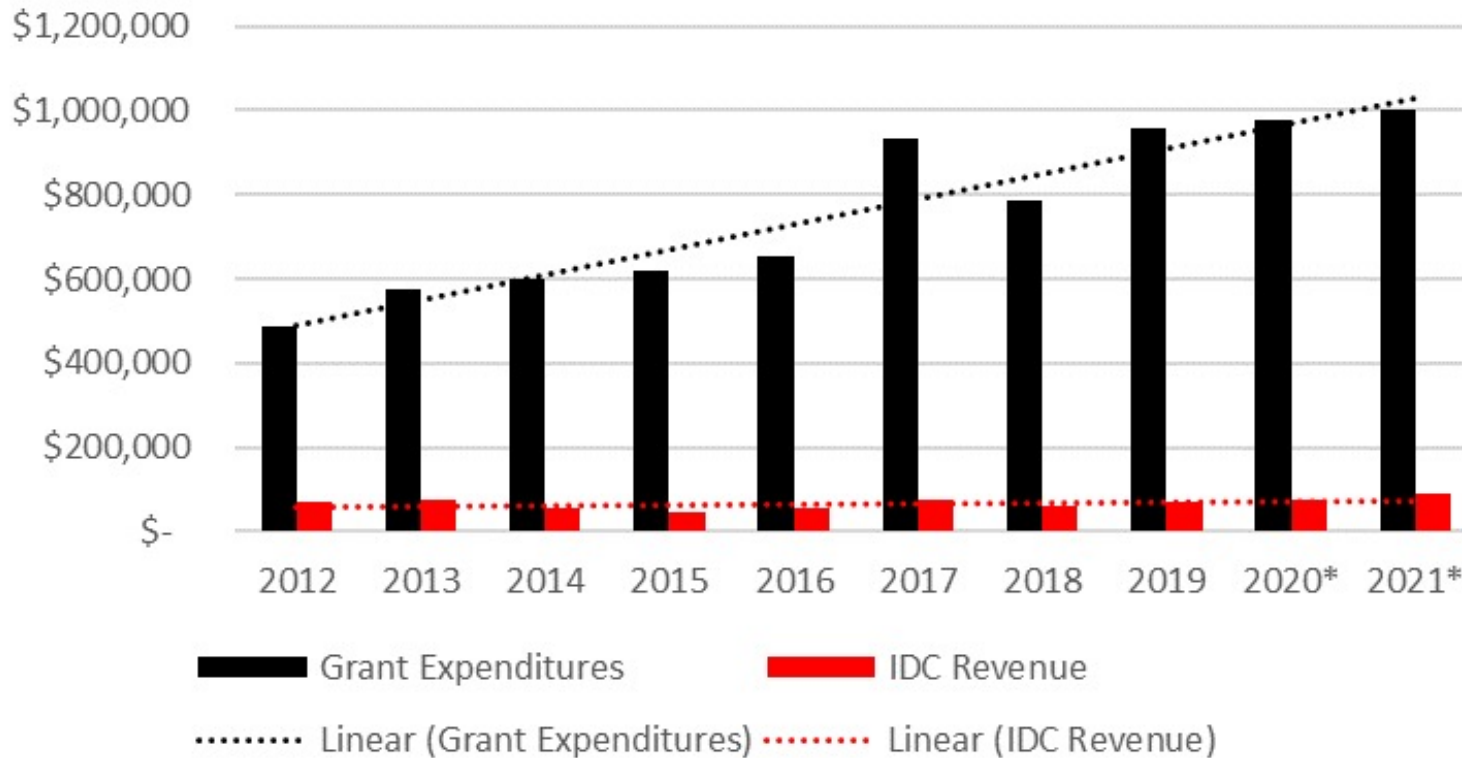
Drs. Anneliese Ripley, Michael Morrow and Robert Thomas

Board of Regents

March 10, 2022



## Federal and State Grant Metrics



\*Data do not include Cares Act funds.

## Trends

- 104% increase in grant expenditures from FY12 to FY21
- 25% increase in indirect cost (IDC) revenue from FY12 to FY21
- 48% increase in same date IDC revenue from Feb 2021 to Feb 2022
- Higher degree of faculty and undergraduate student engagement in grant-funded research













A man with glasses and a black button-down shirt is walking through the poster session, holding a coffee cup.

A man in a dark jacket is looking at a poster in the background.

A woman in a yellow vest is talking to a man in a striped shirt.

A woman in a black sweatshirt with "MONTANA" on the back is looking at a poster.

A woman in a red and white plaid shirt is looking at a poster.

A woman in a green sweater is looking at a poster.

A woman in a white t-shirt with "FREE" and "WAW" on it is holding a plate of food.

A poster titled "University of Montana's Great Falls" is displayed on a wooden board.

A poster titled "Wet Ocean Center" and "A Case Study of Sustainable Conservation" is displayed on a wooden board.



