

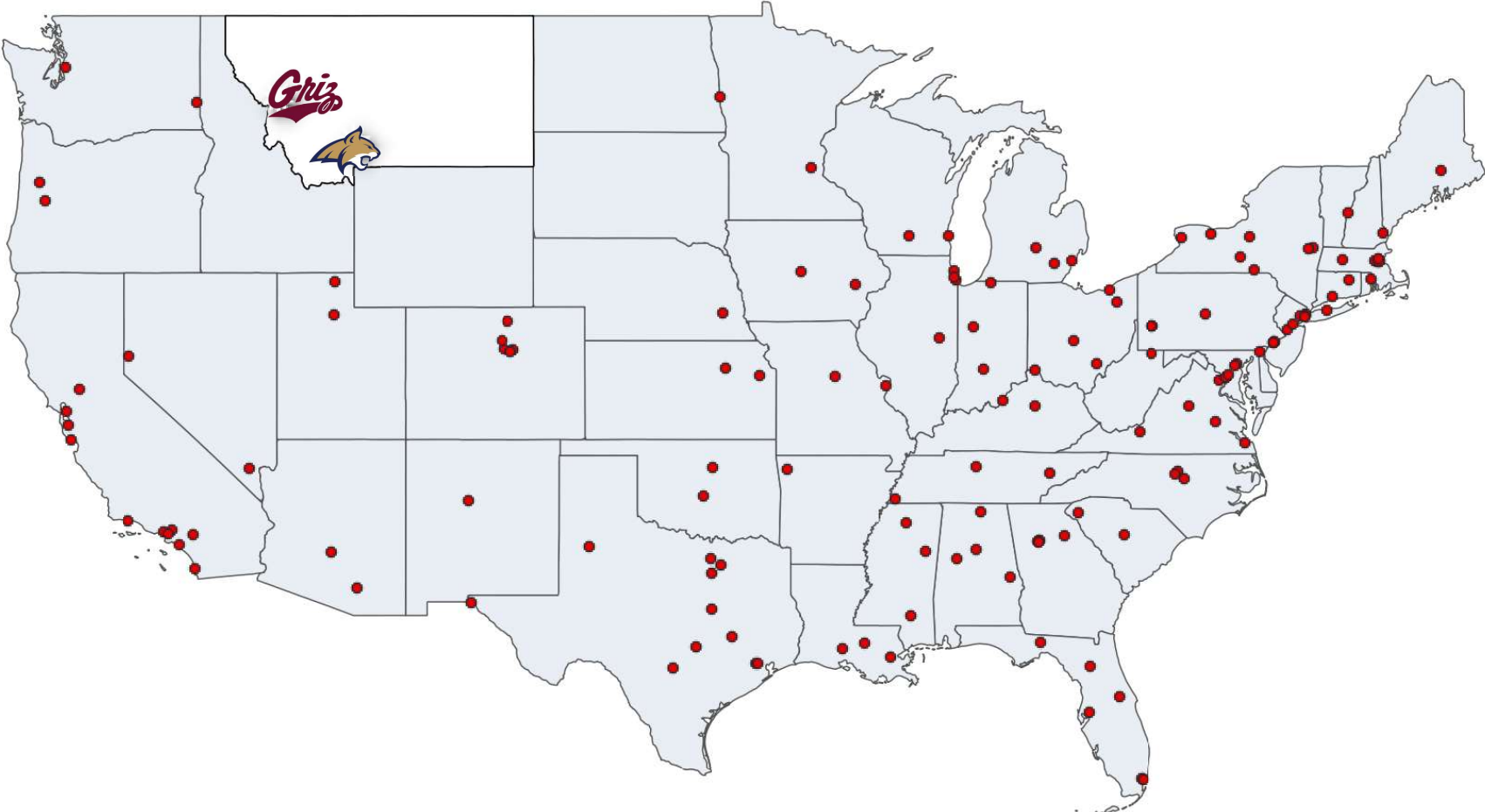


Strengthening Montana R1 Status Graduate Education & Growing MUS Research

September 2022 Board of Regents



2022 Carnegie "Very High Research" (R1) Institutions





The Carnegie R1 Calculation

Carnegie Classification Data Points

- 1. STEM Research Expenditures
- 2. Non-Stem Research Expenditures
- 3. Number of Research Staff
- 4. Number of STEM Doctorates Awarded
- 5. Number of Humanities Doctorates Awarded
- 6. Number of Social Science Doctorates Awarded
- 7. Number of Other Doctorates (Excludes Professional Practice Degrees such as: DPT, DNP, MD)

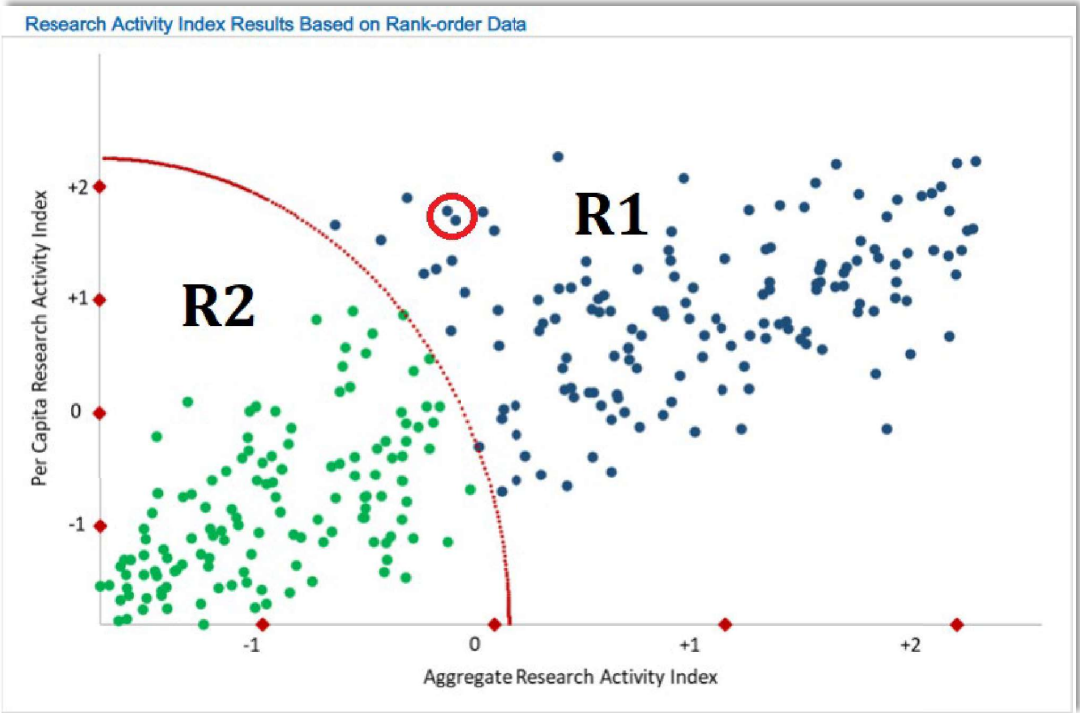
Expenditures

Research Staff

Doctorates

Professional Degrees NOT Included

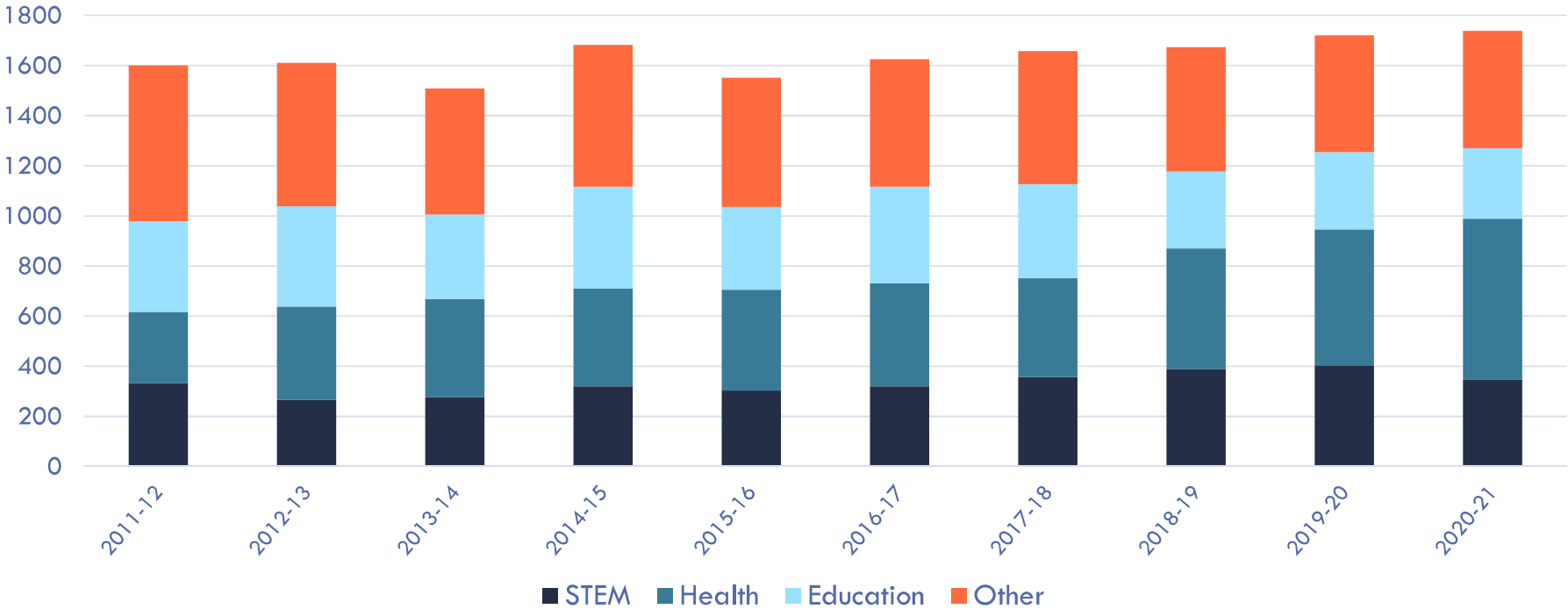
Doctorates are Weighted More Than Expenditures





MUS Graduate Degrees Awarded, 2011-2020

<https://mus.edu/data/dashboards/degrees.html>



Change 2011-2020: ■STEM ▲4% | ■Health ▲127% | ■Education ▼22% | ■Other ▼25%

TOTAL: ▲8.6%



MUS Graduate Degree Wage Outcomes

5-years following graduation. <https://lehd.ces.census.gov/applications/pseo/>

Degree Type	25th %tile	Median Wage	75th %tile	% Working in Montana
Masters	\$47,849	\$62,326	\$79,467	49%
Research Doctorate	\$56,829	\$73,692	\$95,455	29%
Professional Doctorate	\$65,489	\$84,877	\$124,750	59%

The average annual wage in Montana is \$51,322 (Source: MT [DLI from Quarterly Census of Employment and Wages](#))



Graduate Education Benefits Montana

PhD
Candidates
Drive
Montana's
Research
Success

Graduate Education Benefits Montana



Over \$315 million in research expenditures between the two institutions, facilitated by PhD students

- UM and MSU support more than 700 RA contracts in addition to national scholarships (e.g., NSF Fellowships)

Many come to Montana to work in programs with national and international reputations for their research

- Adds to state capacity for generating research and ideas that drive innovation and entrepreneurship

Includes Montana students, recruited from high-quality research Masters programs

- PhD completion allows them to expand their research skills, training, and thus to leverage further opportunities

PhD Candidates are a Crucial Campus Teaching Resource

- Every semester, graduate students on both campuses make a positive impact on undergraduate education in various roles
 - Graders
 - Lab Instructors
 - Mentors
- Teaching experience is crucial to national efforts in Preparing Future Faculty



PhD Alumni
Create New
MT Industry

Graduate Education Benefits Montana



MSU PhD Founder	Type of company
Orbital Micro Systems	Cubesat satellites
Agile Focus	Optics
Prebiotic Radicals	Radical chemistry
NWB Sensors	Environmental sensing
Nanoquies Technologies	Software
Native Nexus Consulting	Education consulting
Bridger Nature Center	Summer camps
Calao	Wildlife Consulting
Ocean Media Institute	Non-profit
Fight or Flight Emergency Medical	Education
Stones and Bones	Graphic Design

PhD Alumni Serve State Needs

Graduate Education Benefits Montana

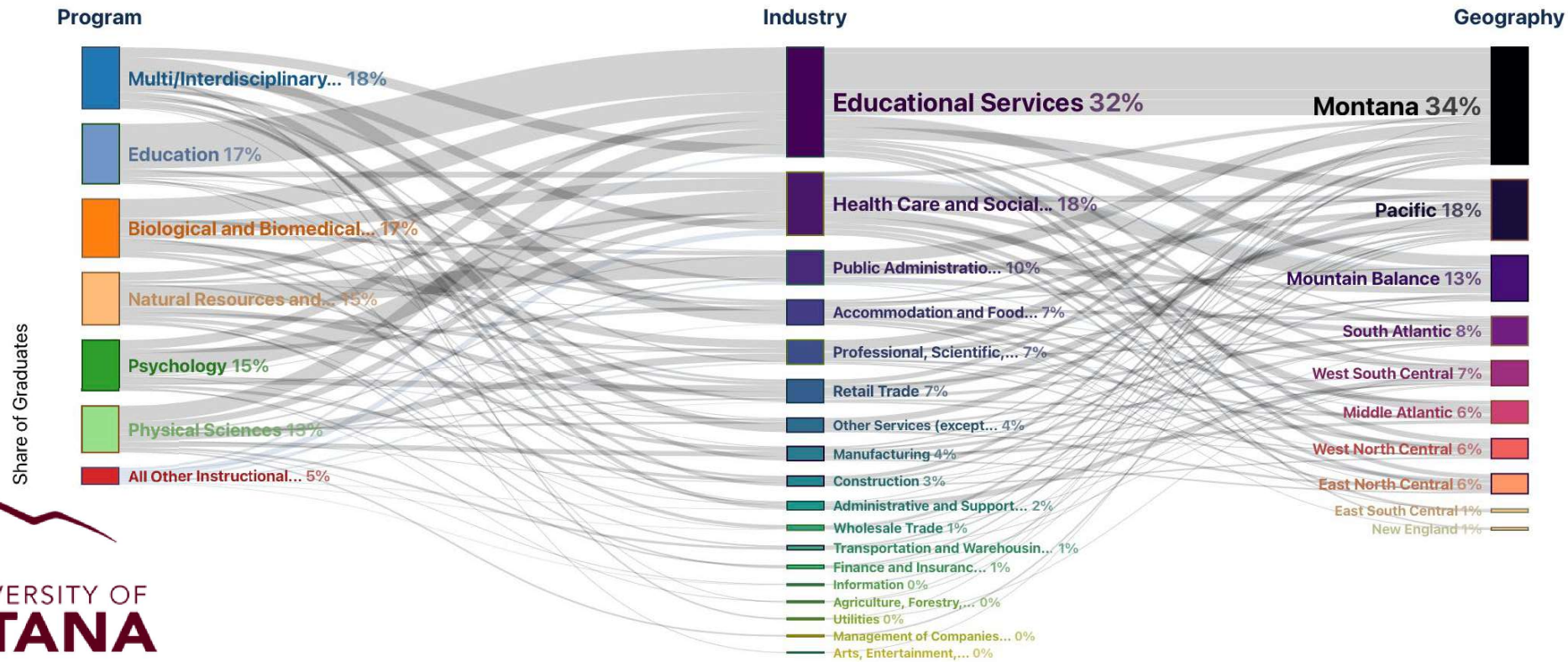


Recent UM PhD Graduates have gone on to serve at:

- Recent PhDs in UM-affiliated private companies: e.g, **DermaXon**, **Inimmune**, **Panthera**, **Speedgoat.io**, and **Sunburst Sensors**
- **Anthropology / Psychology / Public Health:** Canon Heritage Consultants, VA Montana, CSKT Tribal Health, All Nations Health Clinic, Missoula Health Department, private mental health practice.
- **Biochemistry/Biophysics:** Integrated Structural Biology Core Facility, McLaughlin Research Institute, National Cancer Institute, Rocky Mountain Labs
- **Counseling / Education:** dozens of teachers, principals, and superintendents across the state, and numerous counselors working in private practice
- **Wildlife Biology / Forestry:** Montana Fish, Wildlife, and Parks, US Fish and Wildlife Service, US Forest Service, US Geological Survey, MPG Ranch, National Park Service, Smithsonian

What industries do research PhDs enter?

5-years following graduation. <https://lehd.ces.census.gov/applications/pseo/>



Suppressed: Mathematics and Statistics; Social Sciences





UM Student Spotlight



Dr. Desiree Fox
Behavioral Health Division Director, CSKT Tribal Health



Creating critical mental health, addiction, and preventative health resources for the CSKT community.



Dr. Nick DeCessare
Research Biologist, Montana Fish, Wildlife and Parks

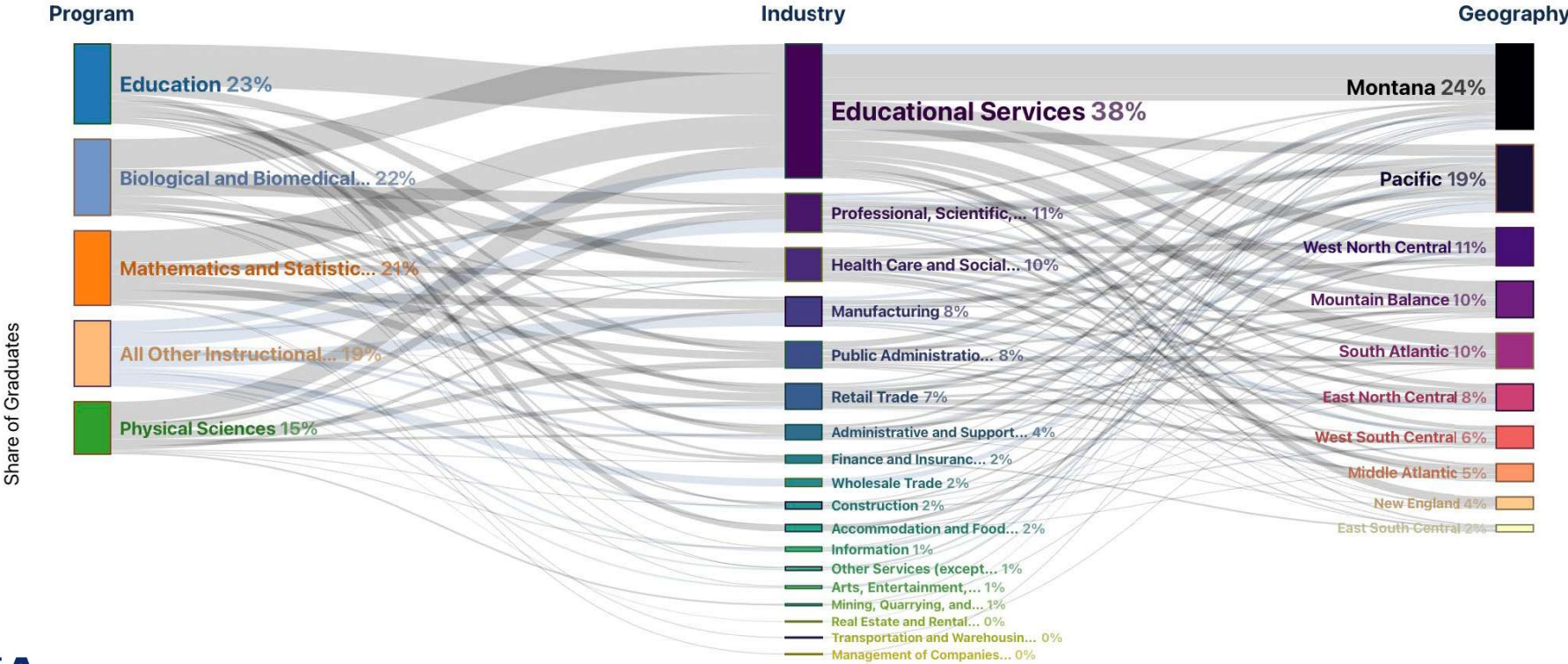


Developing new tools and techniques for wildlife monitoring and habitat management.



What industries do research PhDs enter?

5-years following graduation. <https://lehd.ces.census.gov/applications/pseo/>



Suppressed: Natural Resources and Conservation; Engineering; Computer and Information Sciences and Support Services; Agricultural/Animal/Plant/Veterinary Science and Related Fields





MSU Student Spotlight



Dr. Sarah Lukes
Founder & CEO, Agile Focus Designs



Automating and accelerating microscopic imaging with fast focus and zoom technology without any moving parts.



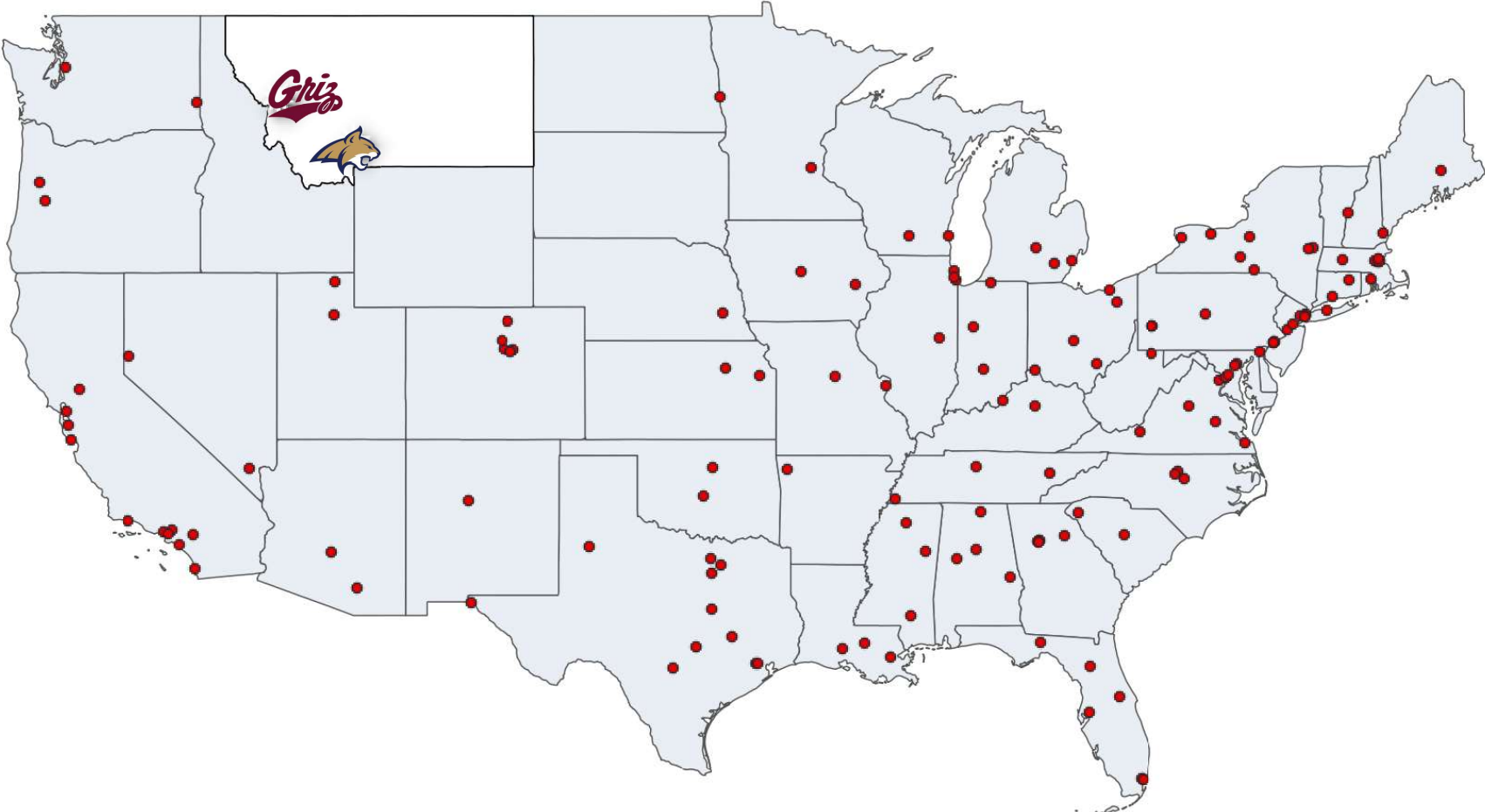
Dr. Jill Falcon Ramaker
Director, Buffalo Nations Food Systems Initiative



Building capacity for indigenous food sovereignty.



2022 Carnegie "Very High Research" (R1) Institutions





Suggested Goals for MUS Graduate Education

1. Improve on-time completion (via, for example, improved 1st year community building and finish-line completion grants).
2. Bring graduate student stipend, health, and housing supports up to peer benchmarks over time.
3. Increase collaboration to expand the availability and breadth of graduate course offerings.
4. Coordinate to stand up new pathways in areas of state need and strength.
5. Develop shared benchmarks and accountability measures.