

SD BRIN/INBRE

Expanding the Biomedical
Research Capacity in South Dakota
by Fostering a Culture of Research
at The Partner PUIs

Dr. Victor Huber, The University of South Dakota – Principle Investigator
Dr. Cynthia Anderson, Black Hills State University – Program Coordinator

Executive Committee – Liaisons from each partner institution and the
Core Performance Site Leads.

External Advisory Committee & Steering Committee

External Advisory Committee

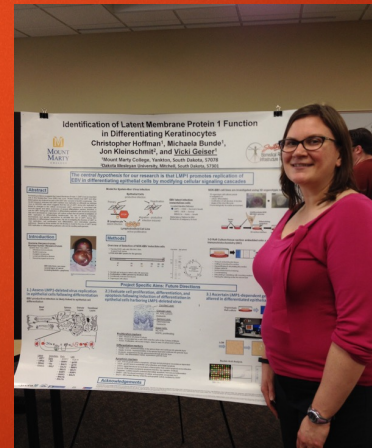
Member Name	Specialization	Institution
Michael Wright (Chair)	Proteomics	University of Iowa
Julie Dickerson	Bioinformatics & Computational Biology	Iowa State University
Dan Dixon	Molecular Biology	University of Kansas
David Pollack	Physiology - Hypertension & Renal Disease	University of Alabama at Birmingham

Steering Committee –

- SD INBRE PI and PC
- VPAA or VPR from each partner

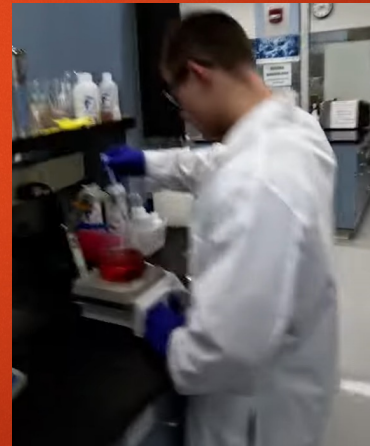
Research Culture at a PUI

- What it is not:
 - A change in institutional purpose
- What it is:
 - A supportive environment where research is valued and flourishes
 - A culture that fosters the development of critical skills for biomedical/biotech research careers
 - support mentored undergraduate research experiences
 - enhance undergraduate education in STEM through immersive learning by supporting the creation of Course-based Undergraduate Research Experiences (CUREs)



Research Culture at a PUI

- Requires:
 - Institutional vision
 - Administrative support
 - Collegiality & communication
 - Faculty engaged in research
 - Enhanced learning opportunities for students
 - Appreciation of research by community
 - TIME!



NIH Investment Since 2001

- More than \$60 million in NIH funding since 2001
- Currently receive \$2.5M per year
 - \$1M for USD, \$1.5M for partners
- Next round (2026-2031) funding levels will be \$2.75M per year
 - \$1.1M for USD, \$1.65M for partners

Challenges



- Teaching focused institutional culture, vision, values
- High teaching loads
- Lack of research-related skills such as grant-writing and grant management
- Lack of research infrastructure, including personnel
- Isolation
- Limited finances

Tackling the Challenges – Student Research Training

- Undergraduate Student Research Program
 - Academic year and/or summer research
 - Statewide competitive application process
 - Hourly wage (\$15.19) during the academic year
 - \$6075 salary for the 10-week Summer Program
 - Present at statewide conference

Tackling the Challenges – Faculty Research Support

- PUI Faculty Mentors for the Undergraduate Research Program
 - Academic year and/or summer research
 - Research supply funds
 - up to \$10K supplies for AY + Summer mentoring
 - up to \$5K supplies if only AY or Su mentoring
 - \$10K summer salary if a student is placed with the faculty mentor in the summer

Tackling the Challenges

- Developmental Research Project Program
 - \$50K Pilot Projects (3 mos commitment required)
 - \$100K - \$125K Research Projects (6 mos commitment required)
- Access to Research Cores
 - Access to Cores (mentors via application for fee waiver; or DRPP budget request)

Tackling the Challenges

➤ Core Facilities

- Proteomics Core
- Bioinformatics Core
- Data Science Core
- Genetics & Genomics Core (WestCore) - BHSU
- Tissue Engineering & Cell Culture Laboratory (TECCL) - SDSMT

USD



Research Space via A&R funding

DWU



MMC



Augustana



BHSU

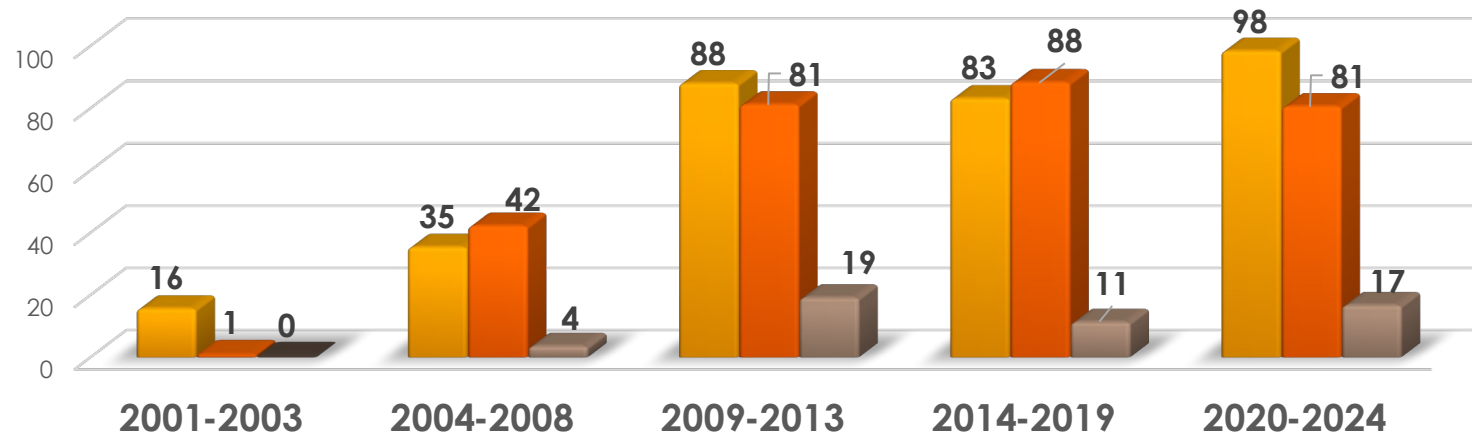


Coming soon
SDSMT - TECCL

Impact on Students



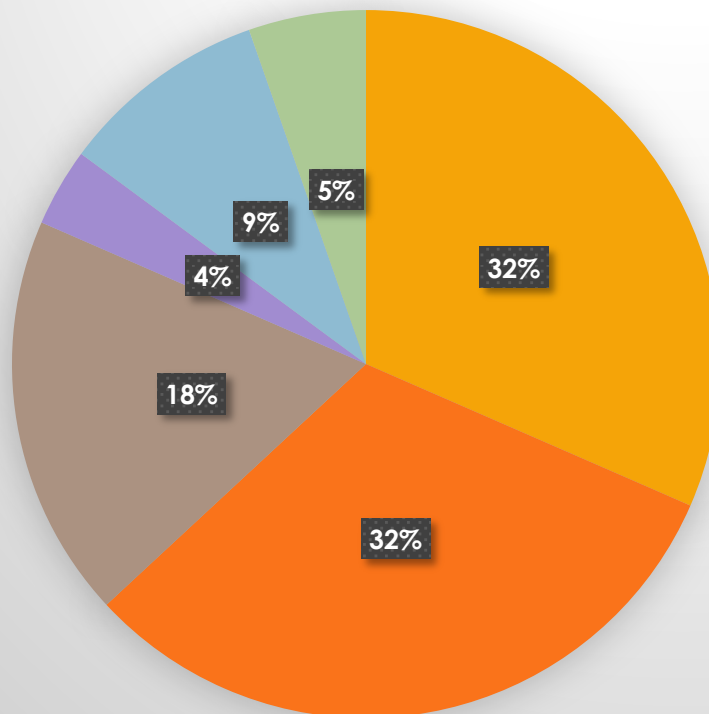
Annual Average PUI Student Research (All funding sources)



- Number of students participating in research (all funding sources)
- Number of students attending/presenting at local, regional & national meetings
- Number of students assisting with manuscript writing leading to co-authorship

Impact on Students

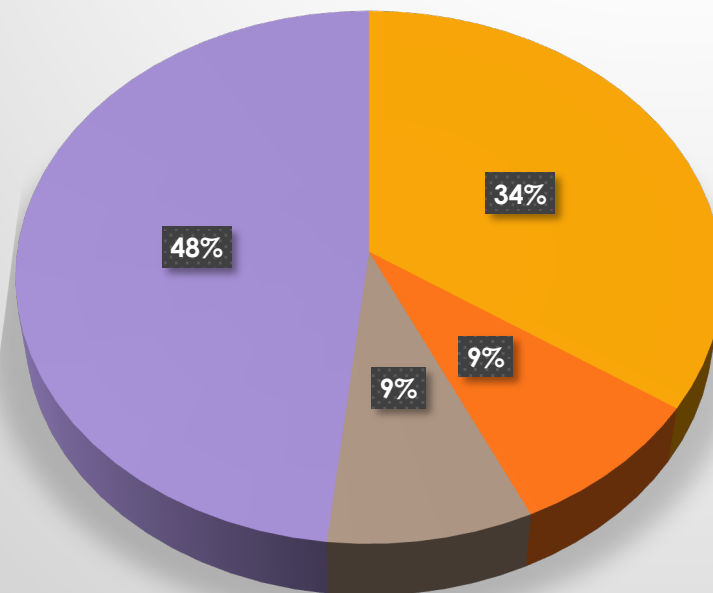
Undergraduate Research Fosters Success! BHSU SD INBRE Graduates 2001 – 2023 (168 students)



- Biomed, Bioscience or Chemistry Graduate School
- Medical or Professional School
- Biomedical or Bioscience Technician Jobs
- Other Graduate School
- Other Career
- Unknown

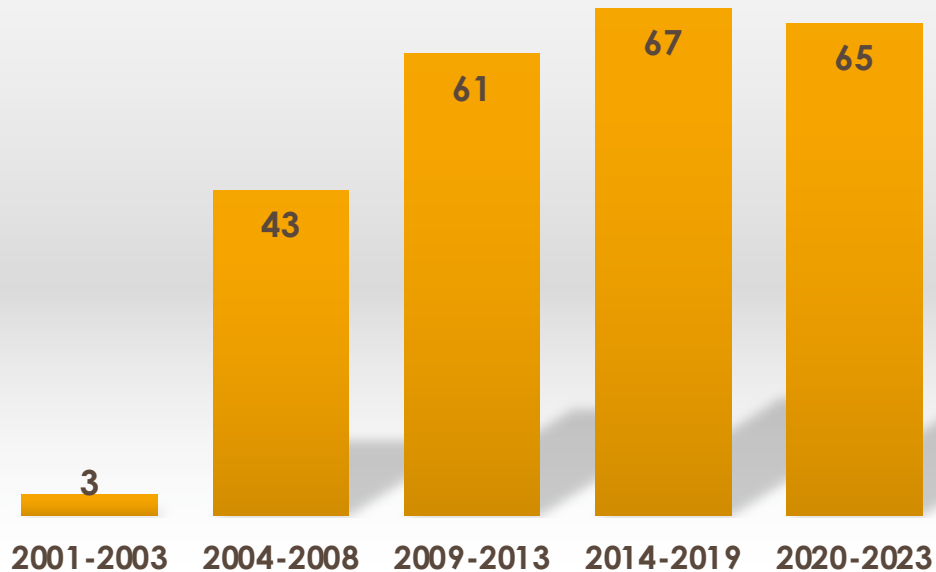
Impact on Students

116 INBRE-supported undergraduates completed their degrees during the first 3 years of the current phase of INBRE funding (Sept 2020 - Aug. 2023)



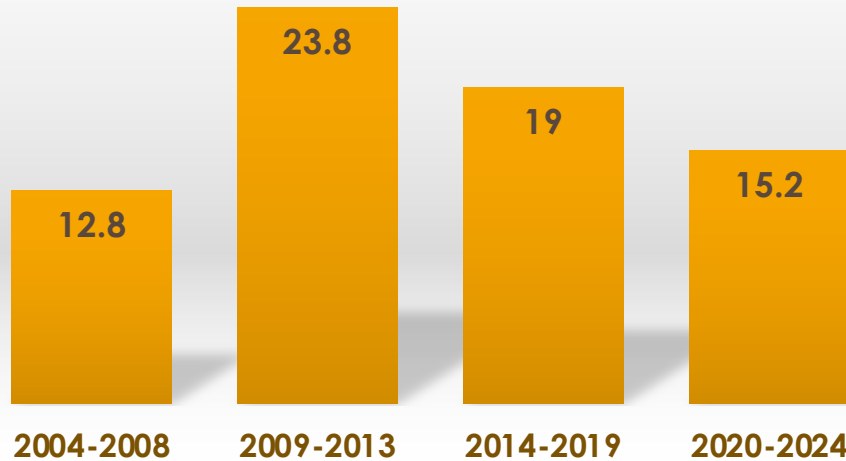
- Number who transitioned to biomedical graduate or health professional schools
- Number who are working in research
- Number who are working in a non-research, STEM-related field
- Other career

Total Number of Peer-Reviewed
Journal Publications by
Participating SD BRIN Faculty per
Funding Cycle



Impact
on
Faculty

Annual average number of
grant proposals submitted by
participating PUI faculty



2020-2023 PUI Grant Proposal Outcomes

36

Grant Proposals Submitted by PUI Faculty

11

DRPP Research Projects Supported

\$1,159,753

7

Research Completion Awards

Total: \$122,500

24 PUI Faculty Grant Proposals Funded

Non-Federal: \$64,108

Federal Non-PHS: \$5,962,588

Federal PHS INBRE Supplements: \$1,023,184

Impact
on
Faculty

Moving Forward: Sept 2025 – Aug 2031

- Program name change to:
South Dakota IDeA Network of Biomedical
Research Excellence (SD INBRE)
- Add 3 new Partner PUIs
 - SDSMT (Biomed Engineering)
 - NSU
 - DSU

SD IDeA Network of Biomedical Research Excellence (SD INBRE)

