



**Minot State University
Research Presentation**

**SBHE Research and
Governance Committee**

September 16, 2020

Minot State Research Output

- Broad student engagement in research across campusActive IRB for review of all human subject research
 - Average of ### applications reviewed per year
- Grant activity
 - Over \$9 million in federal/state funding since 7/19
 - Of this, \$400K has funded non-public service, non-instructional research
- Publications
 - Average ~200 publications and ~750 presentations per year



Be seen. Be heard. BE INSPIRED.

Division of Science Research Activity

- Geology
 - Paleogeography
 - Sources of ND sandstones
 - Water usage and recharge
- Chemistry
 - Novel fungicide synthesis (INBRE, EPSCoR)
 - Methamphetamine cleanup methods
 - Medicinal plant chemistry



Schmidt Lab Research Activity

- Mode of action studies on fungicides (INBRE)
- Mode of action of antimicrobial peptides (INBRE)
- Peripheral effects of methamphetamine (INBRE)



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Schmidt Lab Research Activity

- Mode of action studies on fungicides (INBRE)
- Mode of action of antimicrobial peptides (INBRE)
- Peripheral effects of methamphetamine (INBRE)
- Mode of action studies on the novel coronavirus (Submitted)





Thank You



Heidi Super

Sept. 16th

SBHE Meeting

Research and Governance Committee

"Being part of Minot State undergraduate research community helped me build the confidence and skillset to even see myself as a future scientist. When I say, undergraduate research opens up avenues not just for career but for life- I see myself as an example. Undergraduate research at Minot State first helped me dream and then equipped me to fulfill my dream."

Bikalpa Ghimire

BA Biology 2109



Biology Department Undergraduate Research

- Environmental Toxins/Endocrine Disruptors (INBRE and ND Game and Fish)
- Secondary Metabolites in Native Plants (INBRE)
- Native Plant Surveys and Molecular Identification of species (INBRE)
- Heavy Metal Uptake and Plant Growth and Development (INBRE)
- Methamphetamine addiction/behavior (INBRE)
- Microbiome studies (INBRE)

- Cancer genetics (Acute Myeloid Leukemia)
 - Understanding mutation mechanism leading to leukemia
 - Novel therapy approaches using epigenetic modulation

INBRE—IDeA Networks for Biomedical Research Excellence (2004-2020 and beyond!)

- The level of research done at all ND PUIs would not have been possible otherwise.
- Minot State was/is by far the most active and productive in student work, publications, and presentations funded by INBRE
- INBRE-generated F and A brought in several millions to MiSU.

Undergraduate Research Benefits

- Recruiting Faculty
- Faculty satisfaction, promotion, collaboration
- Grant opportunities—F and A for institution
- Public exposure

- Recruiting Students
- Student engagement and satisfaction
- Student progression—post baccalaureate, in state, out of state
- World/life exposure—external validation
- Student-faculty mentoring relationships

Undergraduate Research Challenges

- Large teaching loads
- No load credit for undergraduate research mentoring
- Limited grant opportunities, limited facilities, limited collaboration
- Perception—not a research university
- Limited adjunct pool
- Varying needs for budget and productivity

They captured their dreams...

- Physicians (4). *All UND graduates/students
- Veterinarian-(2)
- Ph.D. (6) *1 UND
- MS (1)
- PT (1)
- MLS (1)



They can go anywhere from
here....