

**NDSU** COLLEGE OF  
SCIENCE AND MATHEMATICS

PAID / CREDIT



21-22

# ROPES

Research Opportunities for Engaging Students



## Participate in world-class research

Faculty members in the College of Science and Mathematics invite you to join them in their labs and in the field. Our cutting-edge researchers are ready to show you the ropes of scientific research and give you a front-row seat for the latest discoveries in their fields.

Participating in research gives you the opportunity to immerse yourself in science and apply what you learn in the classroom. You will hone your problem-solving and critical-thinking skills that will serve you well in whatever career you choose.

Your hands-on experience at a top 100 research university will make you more competitive for scholarships and fellowships and give you excellent preparation for graduate-level education.

### Why do research?

- Earn academic credits or get paid.
- Develop skills for your career.
- Apply what you learn in the classroom.
- Be more competitive for scholarships and fellowships.
- Work with top-notch researchers.
- Prepare for graduate-level education.

### Get started

1. Review the following list to find a research project that interests you.
2. Contact the faculty member about working with him or her. You can find contact information in the campus directory at [ndsu.edu/directory](https://www.ndsu.edu/directory).

“My experience in undergraduate research is the best form of supplemental learning because I have yet to find an extracurricular that brings the classroom to life in the way participating in research does. Undergraduate research reinforces the importance of understanding fundamental principles in your area of study, which makes learning even more rewarding.”

**Elena Linster** *junior in biological sciences*

## Biological Sciences

Professor	Students	Major or coursework	Research area	Credit or pay
Laura Aldrich-Wolfe	2	Any	Plant-fungal interactions	Credit to start
Kimberly Booth	1-2	No major coursework requirement	Teaching and learning of non-majors biology courses	Credit
Julia Bowsher	1-2	Biol 151	Evolution and development of insects	Credit to start, pay the next semester
Ned Dochtermann	3-4	Majoring in biology, zoology or psychology	Behavioral and evolutionary ecology	Credit
Kendra Greenlee	1-2	Majoring in biology	Insect physiology	Credit to start
Tim Greives	1-2	Majoring in biology or psychology	Seasonal regulation of physiology behavior	Credit
Angela Hodgson	1-2	Completed Biol 150 and 151	Undergraduate biology education/laboratory classes	Credit
Page Klug	2-3	Majoring in biology, natural resources management or agriculture	Human-wildlife interactions and wildlife conservation in human-modified systems	Pay and/or course credit
Giancarlo Lopez-Martinez	2-3	Majoring in biology and completed Biol 150 and 151	Stress physiology focusing on oxidative stress	Credit to start
Lisa Montplaisir	1-2	Completed Biol 150 and 151	Teaching and learning of undergraduate biology	Credit to start
Katie Reindl	1	Biol 150	Cancer cell biology and pharmacology	Credit
Sarah Signor	Up to 4	Any major	Evolutionary genetics	Credit to start
Matthew Smith	2-6	Students can be freshmen to seniors	Reptile care, herpetology and physiological ecology	Credit to start
Craig Stockwell	1-3	Biology or natural resources management	Conservation ecology and genetics of fishes and amphibians	Credit to start

## Chemistry and Biochemistry

Professor	Students	Major or coursework	Research area	Credit or pay
Uwe Burghaus	2	Chemistry/physics all levels	Surface science, nanoscience and materials	Credit to start
Christopher Colbert	1	GPA 3.0+	Structure biology of membrane and iron binding proteins	Credit to start
Stuart Haring	2-3	Science major, freshman-junior	Molecular and cellular biology, mutation and disease prevention	Credit to start
Dmitri Kilin	up to 3	Chemistry/physics/math/engineering	Dynamics of photo-reactions, photo-luminescence, and charge transfer Materials for LED, PV, and telecommunications	Both
Svetlana Kilina	1-2	Chemistry/physics	Computational chemistry of nanostructures	Either
Alexey Leontyev	1-3	General chemistry	Chemistry education research	Either
Alex Parent	1-2	Chemistry majors	Green chemistry and photocatalysis	Credit
Seth Rasmussen	1-2	Chem 150	Organic semiconducting materials and/or history of science	Credit to start
Kenton Rodgers	1-2	Chemistry/biochemistry	Metallobiochemistry, biophysics, inorganic chemistry, laser spectroscopy	Credit to start
Mukund Sibi	1-2	Organic chemistry 1 and 2	Green chemistry, sustainable materials and medicinal chemistry	Either
Sangita Sinha	2	Freshman-junior, GPA 3+	Structure biology of proteins essential to human health	Credit to start
Wenfang Sun	1-2	Completed Chem 341 and 342 and labs	Synthesis of transition-metal complexes for photodynamic therapy or near-IR emission	Either
Pinjing Zhao	1-2	Organic chemistry 1 and 2	Organometallic chemistry and catalysis	Either

## Coatings and Polymeric Materials

Professor	Students	Major or coursework	Research area	Credit or pay
Bakhtiyor Rasulev	1-2	Major in chemistry/biochemistry/statistics and computer science	Computational polymer chemistry, cheminformatics, machine learning in materials and materials informatics	Either
Andriy Voronov	1-2	Organic chemistry	Polymer synthesis for biomedical applications	Either
Dean Webster	3-4	Major in chemistry/engineering/minor coatings and polymeric materials	Synthesis and characterization of polymers, coatings and elastomers	Either

## Geosciences

Professor	Students	Major or coursework	Research area	Credit or pay
Benjamin Laabs	2-3	Completed or enrolled in Geol 105 and 106	Management and analysis of geochemical and paleoclimate data	Pay and/or course credit
Ken Lepper	2-4	Completed Geol 105, research will start Jan. 2022	Team-based research on glacial Lake Agassiz	Credit

## Mathematics

Professor	Students	Major or coursework	Research area	Credit or pay
Maria Alfonseca-Cubero	1-2	Math major, Math 270, Mathematica experience	Using Mathematica to study convex bodies	Credit
Dogan Çómez	2-3	Math, science, physics major and Math 266, 270	Fractals and their dynamics/coding	Credit
Friedrich Littmann	1-2	Math 450 or 481	Fourier analysis and signal processing	Credit
Indranil SenGupta	1-2	Math/physics/electrical and computer engineering/ computer science; Mathematica experience	Mathematical finance	Credit
Jessica Striker	1-2	Math, physics, or computer science major; Python coding experience or Math 430 or 436	Computational combinatorics	Credit
Abraham Ungar	2	Sophomore+	Hyperbolic geometry	Credit

## Physics

Professor	Students	Major or coursework	Research area	Credit or pay
Yongki Choi	1-4	Physics/chemistry/biology/engineering	Biophysics, bioelectronics and nanotechnology development	Either
Andrew Croll	1-4	Physics/chemistry/mechanical engineering/biology	Polymer science and engineering	Either
Alan Denton	1-2	Physics/chemistry/engineering	Theoretical and computational modeling of soft materials	Credit to start
Andrei Kryjevski	1	Phys 486	Simulation of electronic properties of nanostructures	Either
Mila Kryjevskaja	1-2	Completed Phys 252	Physics education research	Both
Ken Lepper	1	Physics	Radiation dosimetry, triboluminescence	Credit
Sylvio May	1	Physics/chemistry/pharmaceutical science	Theoretical biophysics/physical chemistry	Credit
Alexander Wagner	2	Physics/mathematics/engineering	Modeling fluids with lattice gases	Credit

## Psychology

Professor	Students	Major or coursework	Research area	Credit or pay
Benjamin Balas	2-3	Psychology/sophomore+	Face recognition and visual development	Either
Erin Conwell	3-4	Psychology	Language development and processing in children and adults	Credit
Katherine Duggan	2-4	Any major	Personality, sleep and health	Either
Jeremy Hamm	3-6	Sophomore+/GPA 3.0+	Motivation, cognition and health	Credit to start
Clayton Hilmert	4-6	Sophomore+/GPA 3.0+	Stress and health	Credit
Verlin Hinsz	2-3	Psychology or management major	Organizational/social/industrial psychology; workgroup motivation	Credit
Leah Irish	5-6	Psychology/health sciences	Sleep, lifestyle and health outcomes	Credit
Pan Liu	2-4	Sophomore+, any major but preferably psychology or neuroscience	Developmental psychopathology, developmental neuroscience, emotion processing, anxiety and depression	Either
Mark Nawrot	2-3	Any with neuroscience interest	Visual depth perception, spatial vision and eye movements	Either
Michael Robinson	6-7	Psychology/sophomore+	Personality/emotion	Credit
Laura Thomas	2-4	Psychology	Action and cognition	Credit to start
Kathryn Wissman	1-2	Psychology	Student learning and cognition	Credit



“I’ve had the opportunity to work with multiple professors on machine learning research. It can be difficult to find mentors for something this cutting edge, but NDSU professors have emboldened me and helped me form a true academic passion.”

**Alexander Wilcox**

*senior in mathematics  
and computer science*

# Clubs and Organizations

## BIOLOGICAL SCIENCES

American Medical Student Association

Pre-Dental Club

Pre-Medical Club

Pre-Optometry Club

Pre-Physician Assistant Club

*Adviser: Jill Lodde Greives*

Wildlife Society

*Advisers: Erin Gillam and Matthew Smith*

## CHEMISTRY AND BIOCHEMISTRY

Chemistry and Biochemistry Club

*Advisers: Seth Rasmussen and Stuart Haring*

## COLLEGE OF SCIENCE AND MATHEMATICS

CSM Ambassadors

President: Jade Berg

Vice President: Brooke Burgen

*Adviser: Nadeje Alexandre*

## GEOSCIENCES

Geology Club

President: Annalie Peterson

*Adviser: Lydia Tackett*

## MATHEMATICS

Pi Mu Epsilon (Math Club)

President: Genesis Paul

## PHYSICS

Society of Physics Students

President: Michael Noah

*Adviser: Alan Denton*

## PSYCHOLOGY

Psychology Club

President: Sage Bendickson

*Adviser: Katie Wissman*