PAID / CREDIT

20-21

ROPES

Research Opportunities for Engaging Students

NDSU COLLEGE OF SCIENCE AND MATHEMATICS

Safety goggles were not necessary for the activity captured in this photograph.

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.

"I think undergraduate research is important because you pick up skills employers are looking for. These are skills that are not necessarily taught in the labs or in the classroom. And research gives you valuable lab experience, which is important when you start applying for jobs or to graduate school."

Christiane Palmer *sophomore in chemistry and biochemistry department*

Visit ndsu.edu/directory for faculty member contact information.

Biological Sciences

Professor	Students	Major or coursework	Research area	Credit, pay and/or BS/MS
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
Jill Hamilton	3-4	Any	Plant evolutionary and ecological genetics	Credit to start
Britt Heidinger	1-2	Majoring in biology	Physiological ecology	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
Jennifer Momsen	1-2	Completed Bio 150 and 151	Teaching and learning of undergraduate biology	Credit to start
Lisa Montplaisir	1-2	Completed Bio 150 and 151	Teaching and learning of undergraduate biology	Credit to start
Katie Reindl	1	Bio 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

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Chemistry and Biochemistry

Professor	Students	Major or coursework	Research area	Credit or pay
Philip Boudjouk	1-2	Completed or enrolled in organic chemistry 1 and 2 (CHEM 121 and 122)	Synthetic materials chemistry	Either
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	Credit to start, pay next semester or summer
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
Pinjing Zhao	1	Organic chemistry 1 and 2	Organotransition metal catalysts for organic synthesis	Credit to start

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

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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. 2021	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 Çömez	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	2	Physics/chemistry/engineering	Theoretical and computational modeling of soft materials	Credit
Andrei Kryjevski	1	Phys 486	Simulation of electronic properties of nanostructures	Either
Ken Lepper	1	Physics	Radiation dosimetry, triboluminescence	Credit
Sylvio May	1	Physics/chemistry/pharmaceutical science	Theoretical biophysics/physical chemistry	Credit
Alexander Wagner	up to 3	Background: Linux/C programming/ computational physics	Simulations of fluctuating multicomponent multiphase fluids	Credit

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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	Junior or senior	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
Jeffrey Johnson	4-5	Psychology/Neuroscience	Cognitive Neuroscience of memory and attention	Credit
Mark Nawrot	2-3	Neuroscience	Visual depth perception, spatial vision and eye movements	Credit
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	Either

"I've had the great opportunity to work in two geosciences labs the last couple years. These opportunities have given me first-hand experience conducting field and lab work and provided a chance to attend and present at a national conference. Working in research labs has enhanced my classroom education and prepared me for a successful future."

Emily Nelson

senior in geology

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: Cassidy Schafer
Adviser: Mark Nawrot

GEOSCIENCES
Geology Club
President: Bria Goldade
Advisers: Ben Laabs and Lydia Tackett

MATHEMATICS
Pi Mu Epsilon (Math Club)
Adviser: Azer Akhmedov

PHYSICS
Society of Physics Students
President: Joseph Bonin
Adviser: Warren Christensen

PSYCHOLOGY
Psychology Club
President: Allyson Kuznia
Adviser: Jeff Johnson

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