COLLEGE OF BIOLOGICAL SCIENCES

Commencement

Class of 2017

Saturday, May 13, 2017
Mariucci Arena

University of Minnesota
2017 Commencement

The mission of the College of Biological Sciences is to improve human welfare and global conditions by advancing knowledge of the mechanisms of life through breakthrough discoveries and to prepare today’s students to create the biology of tomorrow. The college is committed to working with colleagues within the University, and with constituents in the community, government and industry to advance knowledge of the biological sciences and to apply that knowledge to improve the quality of life for people in Minnesota, the nation and the world.

The Bachelor of Science Degree

A foundation of liberal education forms the guiding framework of all academic programs for undergraduate students on the University of Minnesota-Twin Cities campus. A liberal education allows students to explore the modes of inquiry and subject matter within the major branches of knowledge. To earn a bachelor of science degree, students must successfully complete at least 120 credits, including courses in the social sciences and humanities, history, chemistry, physics and math, as well as in the biological sciences. Students with B.S. degrees from the College of Biological Sciences have the academic foundation needed for a variety of careers in industry, education, government and other fields, and are well prepared for further study in graduate or professional schools.

Photographs

For your convenience, we made arrangements with a professional photographer to take a picture of each student crossing the stage. Family members and friends are encouraged to remain in their seats and enjoy the ceremony. Please do not block ramps or aisles. Thank you for your cooperation.

Musicians

Summit Hill Brass Quintet
Mike Breidenbach, Macalester College, bagpiper

Although care is taken to ensure the accuracy of the information presented here, there may be unintended errors or changes without notice. This is not an official University of Minnesota graduation list.
Academic Procession

EILEEN FURLONG
Senior Lab Service Coordinator (retired)
Mace Bearer

Eileen Furlong is an alumna of the College of Biological Sciences and was a longtime member of the staff. During 17 years at the College, she cared for animals, planned and set up labs for students and supported labs for the College’s Introduction to Animal Behavior course and Nature of Life courses at Itasca Biological Station and Laboratories. She retired earlier this year after more than three decades working in laboratory science and science education.

Faculty Marshals

Students choose faculty marshals to represent majors during the commencement ceremony.

Laurie Parker, Ph.D.
Representing Biochemistry majors

Deena Wasenberg, Ph.D.
Representing Biology majors

Emilie Snell-Rood, Ph.D.
Representing Ecology, Evolution and Behavior majors

Ann Rougvie, Ph.D.
Representing Genetics, Cell Biology and Development majors

Ryan Hunter, Ph.D.
Representing Microbiology majors

Steven Mcloon, Ph.D.
Representing Neuroscience majors

Peter Kennedy, Ph.D.
Representing Plant Biology majors

David Matthies, Ph.D.
Representing multiple majors
Multilingual Greeting

_Students will greet the audience in a number of languages using the following statement: “On behalf of the class of 2017, welcome to the undergraduate commencement ceremony for the College of Biological Sciences.”_

Katie Kelly - English  
Dimitri Sidiropoulos - Greek  
Mirza Baig - Urdu  
Elaine Benke - German  
Halima Elmi - Somali  
Leonce Song-Naba - Moore  
Qing Yang - Mandarin Chinese

Welcome

VALERY FORBES, PH.D.  
Dean, College of Biological Sciences  
Professor, Ecology, Evolution and Behavior

Valery Forbes became dean of the College of Biological Sciences at the University of Minnesota in 2015. She previously served as director of the School of Biological Sciences at the University of Nebraska-Lincoln and was founding chair of the Department of Environmental, Social and Spatial Change at Roskilde University in Denmark. Her research focuses on population ecology and modeling, fate and effects of toxic chemicals in sediments, and ecological risk assessment. She has published around 150 peer-reviewed articles and three books on these topics. Forbes served on the Danish Natural Sciences Research Council, NATO’s Environmental Security Panel, as well as numerous European advisory panels and working groups. She currently serves on the board of the Freshwater Society. Forbes received her doctorate in coastal oceanography from SUNY-Stony Brook.

Student Spotlight

College of Biological Sciences graduating seniors reflect on their student experience in a brief video presentation.
Student Academic and Leadership Awards

ASTRONAUT SCHOLARSHIP
Michael Blazanin

SUE W. HANCOCK SCHOLARLY EXCELLENCE IN EQUITY AND DIVERSITY AWARD
Zineb Alfath

DISCOVERY SCHOLAR
Mikayla Enger

GILMAN SCHOLARSHIP
Sowda Ahmed

PAGE SCHOLAR
Jando Danial
Sey Lee
Alex Tang

GOLD GLOBAL EXCELLENCE SCHOLARSHIP
Fadzai Manungo

AMERICAN PANCREATIC ASSOCIATION YOUNG INVESTIGATOR AWARD
Audrey Lane

THOMAS BURNETT ADVANCED LEADERSHIP PROGRAM
Adam Cox
Akila Pai
Jake Schauburger

PHI BETA KAPPA
Anisa Salma Ahmed
Zineb Alfath
Danielle Brooke Amundsen
Katherine R Augspurger
Caleb Daniel Ayers
Salam Paul Bachour
Jacob Raymond Blichfeldt
Colin Randolph Catlin
Matthew R Christiansen
Erica Chung
Christine Marie Egan
Mary Ryan Elson
Mason Robert Fellmeth
Madeline M Freeman
Christopher A Fuguet
Laura Marie Garbe
Kate Geschwind
Aaron James Grad
Anne Irene Haakenstad
Heather Marie Hanson
Hailey Nicole Haugen
Katherine Ann Hill
Katelyn Jo Hoff
Abigail M Iverson
Sery L Johnson
Ciana Tress Keller
Katherine Ann Kelly
Kyutae Kim
Holly Therese Korthas

Sophia Marie Lazzaroni
Victor T Liu
Rebecca May Lorsung
Mackenzie Madsen
Daniel Jacob Mattinen
Benjamin Edward Miller
Mark M Mizrachi
Ashley Marie Nelsen
Davis Robert Nennig
Sydney Anne Newton
Marissa Catherine Nolan
Laura Leigh Olson
Benjamin Ehrhardt Parchem
Marissa Anne Peyer
Kinsey H Philips
Kasey Ah Pook
Kelly Popham
Himal Amresh Purani
Sachin Dev Rao
Carly Erin Rasmussen,
Christopher John Richardson
Christian Rosenow
Dai Hyun Song
Jessica Elizabeth Sweet
Alex Dieu Tang
Raghav Bashiyam Vadhu
Wyatt A Wagner
Olivia S Wicker
Michael Zhang
Commencement Address

PAUL SILICIANO, PH.D.
Professor and Director of Undergraduate Studies, Biochemistry, Molecular Biology and Biophysics
Director of Undergraduate Research, University of Minnesota

Paul Siliciano is an award-winning educator who has taught everything from introductory biology to advanced graduate seminars. He particularly enjoys introducing non-majors to the beauty and majesty of biochemistry in his Biochemistry 3021 course. In addition to teaching, Siliciano successfully advocated for reducing textbook costs. He received the 2006 Stanley Dagley-Samuel Kirkwood Undergraduate Education Award, a 2010 Horace T. Morse-University of Minnesota Alumni Association Distinguished Teaching Award, a 2011 University of Minnesota Disability Services Access to Achievement Award and the 2014 John S. Anderson Educational Leadership Award. Siliciano graduated from Princeton University and received a doctorate in biology from the University of Pennsylvania. He joined the College of Biological Sciences faculty in 1990.

Presentation of the Candidates

JOHN WARD, PH.D.
Professor, Plant and Microbial Biology
Associate Dean for Undergraduate Education, College of Biological Sciences

John Ward joined the faculty in 2001 and is a Professor in the Department of Plant and Microbial Biology. His research focuses on understanding metabolite transporter proteins in plants using electrophysiology and molecular biology. He teaches General Botany and is an instructor at Nature of Life at the Itasca Biological Station and Laboratories. As the associate dean for undergraduate education, he is responsible for improving the CBS undergraduate curriculum. Ward received his doctorate in botany from the University of Maryland.
Conferral of Degrees

THOMAS J. ANDERSON
Regent, University of Minnesota

Tom Anderson is a licensed funeral director who owned and operated the Anderson Funeral Home in Alexandria, Minnesota for over 30 years. An active community member, Anderson has served on the board of the Alexandria Area Chamber of Commerce and the Alexandria Area Economic Development Commission. He is also a board member of Ethos Home Health Care in Fargo-Moorhead and a former board chair of Knute Nelson Health Care in Alexandria. Anderson graduated from the University of Minnesota with a bachelor’s degree in mortuary science.

Congratulations and Welcome

TIM TRIPP
College of Biological Sciences Class of 1996

Tim Tripp is the assistant director in the Office of University Economic Development at the University of Minnesota. He works to advance research and industry collaboration at the University. He was an active member of the Biological Sciences Alumni Society board for many years, serving as board president from 2012-14, and is a lifetime member of the University of Minnesota Alumni Association. Tripp received a bachelor’s degree in microbiology in 1996 and an master’s degree in microbial pathogenesis in 2001 from the College of Biological Sciences, as well as an MBA from the Carlson School of Management at the University of Minnesota.

Closing Remarks

DEAN VALERY FORBES
Hail! Minnesota

Led by Professor Emeritus Dr. John S. Anderson
accompanied by the Summit Hill Brass Quintet

Minnesota, Hail to thee!
Hail to thee, our college dear!
Thy light shall ever be
A beacon bright and clear.
Thy sons and daughters true
Will proclaim thee near and far.
They will guard thy fame, and adore thy name;
Thou shalt be their Northern Star!

Recessional

Please remain seated until the faculty and graduates exit completely.
Faculty and Staff Recognition

*Faculty and staff award recipients were recognized at a reception preceding commencement.*

2017 McKnight Land-Grant Professor

**YANIV BRANDVAIN, PH.D.**  
Assistant Professor, Plant and Microbial Biology, and Ecology, Evolution and Behavior

The University of Minnesota awards McKnight Land-Grant Professorships to a select group of exceptional junior faculty each year. Yaniv Brandvain studies the genetic roots of self-pollinating flowering plants with an eye to understanding their origin, diversity, distribution and the evolutionary forces that shape them. Using genomic data, he examines patterns of mutation and recombination over the evolutionary history of plant species to develop models that explain why and how organisms that share a common ancestor split into different species. Brandvain received his doctorate in evolutionary biology from Indiana University. He joined the College of Biological Sciences faculty in 2014.

University of Minnesota Early Innovator Award

**MIKAEL ELIAS, PH.D.**  
Assistant Professor, Biochemistry, Molecular Biology and Biophysics

The Early Innovator Award recognizes a researcher who has been at the University for less than six years who is actively engaged in developing innovations and moving them to the marketplace. This year’s recipient, Mikael Elias, studies enzymes in single-celled bacteria and archaea that survive in harsh environments with an eye to adapting them for biomedical, environmental and agricultural purposes. He received the award for his work on enzymes that fight harmful, antibiotic-resistant bacteria. The enzymes “hijack” the bacteria’s communication mechanism, preventing them from forming the structures that lead to disease and drug resistance. Elias received his doctorate in biology, biochemistry and structural biology from the Université de la Méditerranée, Marseille and was a Marie Curie Fellow at the Weizmann Institute of Science. He joined the College’s faculty in 2015.

Pew Scholar in the Biomedical Sciences

**WENDY GORDON, PH.D.**  
Assistant Professor, Biochemistry, Molecular Biology and Biophysics

Pew Scholars represent a highly select group of promising early-career investigators who receive funding to pursue foundational, innovative research. Wendy Gordon studies how cells sense and respond to mechanical forces in their environment at a molecular level. Changes in cell or tissue stiffness are a hallmark of diseases such as atherosclerosis and cancer, reflecting drastic alterations in a cell’s tensional homeostasis. Gordon aims to understand how specific proteins on the surface of cells sense and respond to cellular forces. She received her doctorate in physical chemistry from the University of Chicago. Gordon joined the Medical School and College of Biological Sciences faculty in 2014.
University of Minnesota Impact Award

PERRY HACKETT, PH.D.
Professor, Genetics, Cell Biology and Development

The University of Minnesota Impact Award recognizes a researcher whose innovation most positively and broadly impacted global society and improved quality of life. Perry Hackett received the award for his work on the Sleeping Beauty Transposon, a gene-transfer platform that can reprogram the human immune system to find and attack cancer cells. The platform has been licensed by several biotechnology companies. Hackett co-founded two biotechnology companies — Discovery Genomics, Inc. and Recombinetics, Inc. — and has worked to make both the University and state of Minnesota a genomics and gene-editing hub. He is a member of the Masonic Cancer Center and the Center for Genome Engineering at the University of Minnesota. Hackett received his doctorate in biophysics and genetics from the University of Colorado, and joined the College of Biological Sciences faculty in 1980.

Distinguished McKnight University Professor

REUBEN HARRIS, PH.D.
Professor, Biochemistry, Molecular Biology and Biophysics
Howard Hughes Medical Institute Investigator

Reuben Harris studies the physiological and pathological functions of a family of DNA-mutating enzymes known as “APOBECs.” His pioneering work illuminated the beneficial role that these DNA-mutating enzymes play in providing antiviral immune responses, as well a major detrimental role in fueling the growth of cancer cells. His breakthrough work on APOBECs in cancer mutation created clear opportunities for diagnostic and therapeutic advances. Harris received his doctorate from the University of Alberta, Edmonton and joined the College of Biological Sciences faculty in 2003. The Distinguished McKnight University Professorship program recognizes outstanding faculty members who recently achieved full-professor status.

American Academy of Arts and Sciences

SARAH HOBBIE, PH.D.
Professor, Ecology, Evolution and Behavior

Each year, a select group of accomplished scholars, scientists, writers, artists, civic, business and philanthropic leaders are invited to join the American Academy of Arts and Science. Since joining the College of Biological Sciences faculty in 1998, Sarah Hobbie has served in numerous leadership roles including as co-leader of the Long-Term Ecological Research Program at Cedar Creek Ecosystem Science Reserve. In this role, she collaborates on research related to understanding the ecological consequences of diverse human-caused environmental changes. Hobbie also investigates the impact of human activity in urban environments; in particular, the causes of urban water pollution and the patterns of biodiversity in cities. She received her doctorate in integrative biology from the University of California, Berkeley. Hobbie is a member of the University of Minnesota’s Academy of Distinguished Teachers and the National Academy of Sciences.
Guggenheim Foundation Fellowship

SUSAN D. JONES, D.V.M. PH.D.
Professor, History of Science and Technology, and Ecology, Evolution and Behavior

Susan Jones teaches and writes about the history of environment and disease, especially diseases common to wild and domestic animals, as well as humans. She is a professor and director of the University’s Program in History of Science and Technology and author of several articles and two books, including *Death in a Small Package: A Short History of Anthrax*. She received a highly competitive Guggenheim Fellowship, awarded annually to approximately 175 scholars and artists across the country. Jones completed her doctor of veterinary medicine at the University of Illinois and doctorate in history and sociology of science at the University of Pennsylvania. She joined the University of Minnesota faculty in 2005.

Raymond and Beverly Sackler International Prize in the Physical Sciences

CHARALAMPOS KALODIMOS, PH.D.
Professor, Biochemistry, Molecular Biology and Biophysics

Charalampos Kalodimos uses nuclear magnetic resonance to investigate a broad variety of questions on topics ranging from cancer to molecular chaperones. He received the Sackler Prize for his “beautifully detailed characterizations of structure, function and dynamics in a number of challenging and important biological systems.” The prize was established to recognize and reward outstanding scientists under 45 who demonstrate a dedication to science, originality and excellence. Kalodimos received his doctorate from Institut Curie in France and the University of Ioannina in Greece. He joined the College of Biological Sciences faculty in 2015.

Sewall Wright Award

RUTH SHAW, PH.D.
Professor, Ecology, Evolution and Behavior

The American Society of Naturalists gives the Sewall Wright Award annually to a senior-level investigator making fundamental contributions to the conceptual unification of the biological sciences. The society established the award, named after Sewall Wright, a founder of population and quantitative genetics, in 1991. Ruth Shaw investigates the interplay of evolution and ecology in prairies both to deepen understanding of evolutionary change in the ecological context in which it proceeds and to help keep prairies from vanishing. Shaw earned her doctorate in botany and genetics from Duke University in 1983, and joined the College of Biological Sciences faculty in 1993.
2017 President’s Award for Outstanding Service

NIKKI LETAWSKY SHULTZ
Assistant Dean, Student Affairs and International Programs

The University of Minnesota President’s Award for Outstanding Service recognizes faculty and staff who provided exceptional service to the University. Nikki Letawsky Shultz oversees undergraduate recruitment, academic advising, career development, student engagement and leadership programs for the College. She is a recipient of the National Association of Academic Advisors Outstanding Administrator Award and is a frequent presenter at regional and national conferences related to advising, leadership and learning abroad in STEM fields. She will defend her doctoral dissertation at the University of Minnesota in May 2017.

University of Minnesota Emerging Leader in Applied Plant Sciences Award

NATHAN SPRINGER, PH.D.
McKnight Presidential Endowed Professor, Plant and Microbial Biology

Nathan Springer has made seminal research contributions on the genetic basis of heterosis, the role of epigenetic phenomenon in altering gene expression and silencing transposons in maize, and the causes and consequences of structural variation in maize. Springer is one of the top investigators in his field, widely recognized for his research on the molecular sources of variation within a species and heritable variation with changes in maize phenotypes. This award recognizes an emerging leader in the plant sciences with characteristics and values that reflect agronomist Norman Borlaug’s legacy. Springer received his doctorate in plant biology from the University of Minnesota and joined the College of Biological Sciences faculty in 2003.

Exemplar Award

DAVID STEPHENS, PH.D.
Professor and Department Head, Ecology, Evolution and Behavior

The Animal Behavior Society gives the Exemplar Award to an outstanding researcher who made major long-term contributions in the field of animal behavior. David Stephens studies experimental behavioral ecology, animal decision-making, evolutionary approaches to animal cognition and learning and memory as adaptations. He received his doctorate from Oxford University and joined the College’s faculty in 1997.

Stanley Dagley-Samuel Kirkwood Undergraduate Education Award

DEENA WASSENBERG, PH.D.
Teaching Associate Professor, Biology Teaching and Learning
Associate Director of Undergraduate Studies, Biology

The Stanley Dagley-Samuel Kirkwood Undergraduate Education Award acknowledges
exceptional faculty contributions to undergraduate education. Deena Wassenberg received the award for innovative coursework development, commitment to mentoring undergraduate students and an outstanding teaching record. Wassenberg was a National Academies Education Fellow in the Life Sciences and taught seventh and eighth grade science in Pasadena, California as part of Teach for America before joining the College in 2007. She received a doctorate in environmental toxicology from Duke University.

University of Minnesota President’s Community-Engaged Scholar Award

GEORGE WEIBLEN, PH.D.
Distinguished McKnight University Professor, Plant and Microbial Biology

The Community-Engaged Faculty Scholar Award recognizes one individual annually for exemplary engaged scholarship in their field of inquiry. George Weiblen conducts field research focused on tropical forest ecology and conservation in Papua New Guinea, where he established the first large-scale, long-term forest study plot in Oceania, established a research center where he trains local people in biology and conservation, and helped establish a 20,000-acre conservation area and a public elementary school. He also serves as science director and curator of plants for the Bell Museum of Natural History. Weiblen received his doctorate in biology from Harvard University in 1999. He joined the College in 2001.

American Academy of Arts and Sciences

MARLENE ZUK, PH.D.
Professor, Ecology, Evolution and Behavior
Associate Dean for Faculty, College of Biological Sciences

The American Academy of Arts and Science is one of the nation’s most prestigious honorary societies. Each year, a select group of accomplished scholars, scientists, writers, artists, and civic, business and philanthropic leaders are inducted into the society. Marlene Zuk’s research focuses on the evolution of behavior in animals and she is especially interested in the way that parasites and disease affect their hosts’ mating behavior. Zuk uses insects to understand why males and females are often different in the way they look, sound and behave. She has contributed to major publications and authored a number of books including *Sex on Six Legs: Lessons on Life, Love, and Language from the Insect World*. Zuk received her doctorate in zoology from the University of Michigan. She joined the College in 2012.

Teaching Assistant Awards

These awards recognize students who demonstrate excellence in teaching or other instructional activities that enhance the educational experience for University of Minnesota students. Faculty and students nominate and select recipients.

ROBERT EVANS
NELS SHAFER
Honors and Distinction Designations

College of Biological Sciences degree candidates may graduate with Latin honors, distinction or both. These citations are provisional and do not become official until all requirements for the award are fulfilled.

Latin Honors Designations

Students graduating from the College of Biological Sciences through the University Honors Program took part in a rigorous course of study, research, scholarship or other creative work in the major, culminating in an Honors thesis representing independent work done under the direction of a faculty supervisor or mentor. Students graduating cum laude (with honor) have a minimum cumulative GPA of 3.50 for the last 60 graded credits at University of Minnesota, Twin Cities (UMTC). Magna cum laude (with great honor) awards require a minimum cumulative GPA of 3.66 and summa cum laude (with highest honor) awards require a minimum cumulative GPA of 3.75 in the final 60 graded credits at UMTC.

Distinction Designations

Students earn graduation “with distinction” or “with high distinction” based on cumulative GPA with at least 60 graded credits completed at UMTC. Students graduating “with distinction” must have earned a cumulative GPA of 3.75 or higher in UMTC coursework at the time of graduation; students graduating “with high distinction” must have earned a cumulative GPA of 3.90 or higher in UMTC coursework at the time of graduation. Students graduating with distinction are wearing gold cords and those graduating with high distinction are wearing maroon and gold cords.

Students graduating with the Community Engagement Scholars distinction completed nine credits of service-learning course work, at least 400 hours of community service, a series of reflective essays and a sustainable project for a community organization. A § symbol indicates Community Engagement Scholars.

Students wearing silver cords are graduating with CBS Dean’s Scholars distinction. They have completed a leadership development program consisting of four credits of leadership coursework, service in the community, and a capstone project synthesizing their work as leaders while studying science. A ♦ symbol indicates Dean’s Scholars.

Students wearing purple cords are graduating as part of the President’s Emerging Scholars Program. The President’s Emerging Scholars Program is a four-year opportunity for select undergraduate students at the University of Minnesota with diverse backgrounds and characteristics. A ° symbol indicates President’s Emerging Scholars.
Academic Regalia

Academic gowns worn at American commencement ceremonies originated at English universities during the 14th and 15th centuries. The markings, cut and colors of modern-day gowns indicate the degree, field of study and institution that granted the degree. The bachelor's degree gown is untrimmed and has pointed sleeves. The master's degree gown is untrimmed with winged sleeves. And the doctorate degree gown is trimmed in velvet, with three velvet bars on bell-shaped sleeves. Hoods are edged in velvet with the color indicating the wearer's discipline and faced with the color(s) of the institution that conferred the degree.

At the University of Minnesota, mortarboard tassels indicate field of study for bachelor's degree recipients. The College of Biological Sciences tassel is golden yellow. Honors students wear medallions with a maroon and gold ribbon.

Art professor Philip Morton designed the University of Minnesota mace. It consists of a sphere surmounted by the North Star, symbol of the state of Minnesota, on an aluminum handle set with the University Regents seal. Alfred Nier, Regents Professor of Physics, first carried in 1961 by at the inauguration of President O. Meredith Wilson.
BIOCHEMISTRY

Yeseul Ahn
Douglas J Albrecht
Shawn Peter Anderson
Brandon Michael Anderson
Katherine Rose Augspurger
Abby Louise Axelson
Caleb Daniel Ayers (high distinction, summa cum laude)
Eric Willis Baumgardner
Eric Michael Bender (distinction)
Elaine Patrice Benke
Madison Rae Bergeron
Erik Jeffrey Black
Jennifer Colleen Blum
Kayla Dawn Brown
Jennah Calverly (distinction)
Erin Marie Cassidy ♦
Nicholas Allen Cook-Rostie (summa cum laude)
Zhulan Dalbacka
Peter Dang
Diana Deutsch
Tracy Dinh (high distinction, summa cum laude)
Tiffany Engel
Enkhchimeg Erdenee
Nur Fatihah Muhamed Fozy
Mitchell Christopher Fuller (summa cum laude)
Uyanga Ganbaatar
Collin James Gustafson
Hosam Hassan
Nicholas John Henninger
Louis Thomson Hey (distinction)
Hailey Hickey
Thomas Robert Hougard
Yinyin Huang
Shiyao Huang
Hoa Huynh
Scott James Imberg
Emma Christine Jahnke
Brendon James Johnson
Kyutae Kim (high distinction)
Alexis Alexandria King
Kelsey Jean Klingel
Mitchell George Kluesner (high distinction, summa cum laude)
Alex Jordan Krona (distinction, §)
Vivian Li Siew Kuan
Fredy Kurniawan
Kevin Michael Larpenteur
Alexander Sam Lee (*)
Dayeon Lee
Brett Lehman
Thomas Lein
Evelyn Mae Leland (high distinction, summa cum laude)
Jiawei Li (summa cum laude, §)
Huiyu Li
Victor Liu (distinction)
Amanda Alexandra Lord
Adam Alexander Lord (distinction)
Justin Lynch
Meghan Maltby
Fadzai Charlotte Manungo
Mahmoud Osman Mire
Joseph Robert Monat
Nathan Monsein
Matthew John Mordorski
Kathryn Elise Morris
Jason Mark Morris
Shirley Thanh Nguyen
Michelle Kim Nguyen
Linh Khanh Nguyen (high distinction)
Ruth Nyagitari
Brandon One Feather
Emily Lillian Peterson
Kinsey Hannah Philips (high distinction, summa cum laude)
Kasey Ah Pook (distinction)
Natalya Rabets
Ajay Ramnarayan

♦ = Dean’s Scholars  § = Community Engagement Scholar  ° = President’s Emerging Scholar
Melanie Anne Raphael  
Christina P Reyes  
Frances Marie Rossini  
Megan Ryan  
Mitchel L Ryan  
Harshavardhan Sanekommu  
Jake Michael Schaubberger  
Avonlea Joy Schmitz (high distinction, \textit{summa cum laude})  
Jacob James Schroeder (distinction, ♦, §)  
Jordan Sell (high distinction, \textit{summa cum laude})  
Ashraf Shabaneh  
Jessica Shaklee (high distinction, \textit{summa cum laude})  
Colton Hamilton Simpson  
Matthew Smith  

Daihyun Song (distinction)

\textbf{BIOLOGY}

Austin Wesley Abbott  
Abdullahi Ahmed Abdow  
Ekram Hassan Abdullahi  
Lammi Joseph Aga (♦)  
Shivani Narayan Agrawal  
Sara Ali  
Palvasha M Ali  
Alexia Amundson  
Hallie Marie Anderson (§)  
Brady Daniel Anderson  
Wyatt Maxwell Aubert  
Abigail Awode  
Damola Badewa  
Jesse Timothy Barnes  
Kelsie Lynn Becklin  
Adam Arno Bergh (distinction)  
Michael David Berken  
Salma Bile  
Gabrielle T Bjornson  
Alexander James Boettcher (distinction, \textit{summa cum laude})  
Sarah Kathrynn Boneske  
Callie Brost  
Abigail Marie Cafferty  

Joel Strehl  
Oliver J Sueper  
Lidia K Swanson  
Sebastian Robles Swanson (♦)  
Axel Jacob Sweeny  
Luke Teigen  
Cassandra Tomberlin (high distinction)  
Cher Ling Tong  
Jordan Treder (distinction)  
Joseph William Vavra (\textit{summa cum laude})  
Benjamin J Walker (high distinction)  
Alicia Taylor Wasti (high distinction)  
Luke Westlake  
Sarah Whillock  
Brian Joseph Wisnoski  
Feier (Joy) Xie (distinction)  
Joel Zembles  

Katherine Anne Cahill (distinction)  
Xuan Cai  
Claire Christian Carlson  
Lorenzo Adolfo Castañón (distinction)  
Adam Chant  
Erin McGinnis Chappuis (§)  
Santiago Charry (♦)  
Karin Ann Cheshier  
Sara Choi (♦)  
Erica Chung (distinction)  
Dylan Todd Cole  
Eric Isaías Colón  
Ina Isabella Conrado (\textit{cum laude})  
Tess Cooper  
Bridget Curtin  
Jando Sabah Danial  
Alissa Kay Dean (♦)  
Mary Margaret Duffy  
Jordyn Virginia Dwyer  
Tenaya Egbert  
Halima Said Elmi  
Mikayla Lynn Enger (♦)  
Christian Taylor Erickson  
Samantha J Etzel
Nicholas George Fetters  
Carson U Flynn  
Hui Man Fong  
Matthew John Formanek  
Cydney Caye Froehlich  
Christopher A Fuguet (distinction, ♦)  
Alexandra Nicole Fuher (high distinction, summa cum laude)  
Reid Meier Gamble  
Daniela Sandra Ganske  
Jesus Garcia Garcia  
Sara Ann Gawinski  
Matthew Steven Genin  
Anne Geoffroy  
Kelsi Jo George  
Sarah Hesna Ghannam  
Varsha Goduguchinta  
Hanqing Guo  
Sara Alemayehu Habte  
Allen Halbert  
Kayla Mackenzie Hamann  
Lydia Lauren Hamel  
Christopher Hammitt  
Juhui Han (high distinction)  
Nadia Rose Handler (distinction)  
Mikaela Hartzler  
Nancy Ahmad Hassan  
Ryan Daniel Henschell  
Pakou Her  
Shanudi Herath (♦)  
Toshiyuki Jay Higashi  
Tucker W Hjermstad  
Elizabeth Hoke (♦)  
Sarah Mean Hong  
Abulquasem Rayat Hossain  
Hye In Hyun  
Abigail Marie Iverson (high distinction)  
Emily Asea Iverson  
Gregory William Jacobs  
Cole Joseph Jobin  
Sery Johnson (high distinction)  
Miranda Jost  
Suboohi Khan  
Minza Khan  
Joo Yoon Kim  
Hyejin Kim  
Asher Knudson  
Christian Kraft  
Kristine Anne Kretman  
Josh Scott Kruize  
Jacob Patrick LaMirande  
Paige Larson  
Yang Li  
Mingming Li  
Molly Jean Lien (high distinction)  
Cassandra Longtin  
Nya S Lony  
Petra Kaye Lothert (♦)  
Marion Moraa Machuchu  
Mackenzie June Madsen  
Ava Malnati  
Grigoriy Malyshhev  
Christopher R Malz  
Matthew D Maple  
Samuel J Mayes  
Clayton Mazur (distinction)  
Kevin James McElroy  
Seth Daniel McGonigle (♦)  
Keegan McKye  
Michael Fekadu Mekonnen  
Miroslav Olegovich Melnichuk  
Jacob Peter Merritt  
Nicholas John Mielke (distinction)  
Jia Mikuls (♦)  
Joseph Harmon Miller  
Mary Catherine Minke (♦)  
Pranav Mirpur  
Tatum Jo Mistic  
Karishma Bhargav Mistry  
Kerobel Moges  
Rachel Mary Moniz  
Daniel Mondens  
Sarah Anne Mrozek  
Dustin John Murray  
Motassem Nashawaty (high distinction)  
Motaz Nashawaty (high distinction)  
Ashley Nelsen (distinction)  
Addie Rachel Nelson

♦ = Dean’s Scholars  § = Community Engagement Scholar  ° = President’s Emerging Scholar
Davis Robert Nennig (distinction)
Sydney Anne Newton (distinction)
Vuong M Nguyen (♦)
Chris Viet-Sanh Nguyen
Marissa Catherine Nolan (distinction)
Gabriella Garcia Roma Novoa
Caleb Okemwa Nyabando
Jordan Ocel
Chuckudi Okoro-Chuckuemeka
Laura Leigh Olson
John Paul Osborne
Salah Ahmed Osman
Taha Muktar Osman
Marissa Pahl (distinction)
Wangchuk Pantso
Nicholas Kenn Pashina
Sanya Pasricha
Jessica Lynn Pauly
Lisa Kristina Persson
Emily Marie Pfeiffer
Helene Elisabeth Pippin
Zachary James Plooster
Kelly Louise Popham (high distinction, summa cum laude)
Solomon Poulose
Farida Rakhimbekova
Santhosh Kumar Ramini
Sachin Rao (cum laude)
Zachary T Rathbone)
Christopher John Richardson (distinction)
Morgan Rae Rick
Megan Rioux
Hayden Roos
Christine Sage
Jill Mary Sampson
Ashley Morgan Sanneman (♦)
Erin Marissa Schlothauer
Kersten Dee Schmitt
Nolan Schmitz (♦)
Olivia Schneider
Madeline Elizabeth Schutte
Eric Joseph Scott
Jewoo Seo
Kelly Kathleen Showel
Kayleigh Keshia Sievwright
Rebecca Lynn Simon
Simran Mandeep Singh (♦)
Waverly Ann Slette
Waogwende Leonce Song-Naba
Haley Elizabeth Stafford
Clarissa Sue Still (high distinction)
Emily Ann Stock (high distinction)
Nicholas Konrad Stokfisz
Jackson Robert Strand
Amanda Surma
Britt Arline Swanson
Avalon Berit Swenson
Cynthia Ta
Connor Joseph Thiets (§)
Tyler Thompson
Van T Tran
Anna Tran
Jack Ryan Tribble (distinction)
Grace Anne Twohig (§)
Raghav Vadug (high distinction, summa cum laude)
Michelle Vu (♦)
Tricia Wagner
Zakir Waliany
Gabriel Monroe Walker (high distinction, ♦)
Jaeyi Wang
Benjamin Frank Wilke (§)
Rebecca Ann Willfahrt (distinction)
Anna Wilson
Jessica Wong
Mai Te Xiong
Candice Patricia Yager (distinction)
Samantha Marie Young
Angela Rose Zaccardi
Shira Beth Zats
Michael Zhang
Jacob Zulk
ECOLOGY, EVOLUTION AND BEHAVIOR

Erik Bensen
Alexi Christina Besser
Michael David Blazanin (high distinction, summa cum laude)
Anessa Cecilia Demers (high distinction)
Mary Elson
Nicole Folstad (distinction)
Alyssa Froslie
Laura Garbe (summa cum laude)
Amanda May Hamrick
Eric Holton
Reilly E Hostager
Madeline K Jackson (high distinction)
Samuel Jacob Levin
Rebecca Anne Meyer (distinction)
Charles Daniel Miller
Shannon L Pappas
Grant Lee Piepkorn
Alexia Eve Rodriguez (♦)
Charles Winchell Romlin
Annamarie Rutledge (summa cum laude)
Kieran Schwartz (high distinction)
Mallory Marie Thomas
Sean Michael Walsh
Jonah R Widmer
Ellen Marie Wiederhoeft
Theodore Raymond Wiswall

GENETICS, CELL BIOLOGY AND DEVELOPMENT

Sowda Ahmed (magna cum laude)
Anisa Salma Ahmed (distinction)
Haley Ariel Anderson (distinction)
Danielle Anderson
Rachel Drake Aufdembrink
Baylor Jeffrey Bachmann
Salam Paul Bachour (distinction)
Elizabeth Joyce Bade (distinction)
Mirza Ikram Baig
Melanie DeAnne Bailey
Lorelei Ann Bandel
Ashley Bartlett
Natalie Berreth
Elizabeth Bonillo
Jacob William Bush
Priyanka Chaduvula
Nicola Rae Deák
Corinne Marie Demler
Lauren Douglas
Angie Denyce Duarte
Ryan Joseph Emenecker
Riley Esch
Madeline Freeman (high distinction, summa cum laude)
Kate Alexandra Geschwind (distinction, summa cum laude)
Alexis Dawn Goldade
Lauren Josephine Gonsalves
Aaron James Grad
Heather Marie Hanson (distinction, ♦)
Hailey Nicole Haugen (high distinction, summa cum laude)
Rachel Ann Heuer (high distinction, §)
Drew Honson (distinction)
Alexa Joy Hooberman (distinction)
Austin Sanster Hovland (summa cum laude)
Adam Luke Jaspersen
Krystina Rose Kalland
Martin Jamal Khoury (*)
Trevor Francis Killeen (high distinction, summa cum laude)
Kiry Ratha Koy (§)
Ashley Kue
Kelly Kwong (♦)
Audrey Rose Lane (distinction, summa cum laude)
Jemima H Larson
Baotram Ngoc Le
Evan Lee-To
Glydel Ann Landingin Lopez (distinction, ♦)

♦ = Dean’s Scholars    § = Community Engagement Scholar    ° = President’s Emerging Scholar
Sarah Anna Marie Lucas (*magna cum laude*)
Aneesh Mathur
Kristen Moua
Cole Walter Myers
Tam Thi Nguyen (high distinction)
Eric A Noll
Patrick O’Hare
Travis William Okerman
Breeタa Rykea Oxnard (distinction)
Aaron Noel Pauleon (♦)
Thomas Zachary Paull
Rachael Ann Pearson (♦)
Tashina Picard
Himal Amresh Purani (high distinction, *summa cum laude*)
Elizabeth Susan Rick
Cole Rokke
Christian Scott Rosenow (high distinction)
Lanie Elnore Rudie (distinction, §)
David Schwartz
Renitarul Sebastain

Sara Speier
James Owen Staats
Ian A Stone
Alex Dieu Tang
Alexa Leigh Temme (high distinction, *summa cum laude*)
Kaila Ximena Thatcher (high distinction, *summa cum laude*)
Madison Mae Tschann
Katherine Ann Tyson
Keianna Vogel (high distinction)
Nathan Eric Volkmann
Kevin Wei
William Stuart Whitney
Olivia Wicker (distinction, *summa cum laude*)
Sathira Wijesekara
Claire Louise Wittowski
Kristen Lucille Woodhouse
Cassandra M Yee
John Young
Morgan Bolton Zander

**MICROBIOLOGY**

Alec Robert Baca (distinction)
Allison A Bauman
Aaron Thomas Edward Beczkiewicz
Bruno Bohn
Adam Gregory Cox
Joshua Egge
Steven Charles Erickson
James Patrick Finn IV
Katherine Nicole Hamilton
Surene Henderson
Michael David Howe
Natalie Grace Hunninghake
Jayanth Jawahar
Matthew Jorgensen
Katherine Ann Kelly (high distinction)
Cassandra Louise Krill
Jenny Lam
Kirstin Beret Lawstuen
Ngan Thi Le (distinction)
Bryce Anthony Mayor
Ryan Andrew Morse

Ainslee Elizabeth Neu (distinction)
Akila Pai
Tenzin Paljor
Nate Charles Payne (♦)
Kayla Pederson
Vy Ngoc Pham (*)
Kaitlyn Elizabeth Redford
Timothy Mark Reinders
Julie Rivera
Patrick John Shea (*magna cum laude*)
Abiram Sivanandam
Dave A Sukharan
Angelina Marie Venturo
Jaclynn Maria Wessling
Andrea Rose Willgoths
Leanne Zhang (high distinction, *summa cum laude*)
NEUROSCIENCE

Michael Zane Adkins (distinction)
Alicia M Aho (distinction, summa cum laude)
Zineb Alfath
Kevin Arlius (distinction)
Justin David Aronson
Priyamvadha Balaji
Cassandra Leigh Bauman
Riley James Capizzi
Colin Randolph Catlin
Jessica Chien
Matthew Robert Christiansen
Levi Anthony Cole
Alyssa Nicole Conell (distinction)
Antony Crane
Nicholas Richard Dick
Claire Lindman Donovan
Christine Marie Egan (high distinction, summa cum laude)
Mason Robert Fellmeth (high distinction)
Claire Elizabeth Foerster
Kelly Fogelson (distinction, ♦)
Srividhya Ganesh
Samantha Gibson (high distinction, summa cum laude)
Allison Marie Giddings
Cameron James Gray
Anne Haakenstad (distinction)
Tianyu He
Brea Allison Heil
Daniel James Holten
John Asher Jenkins (distinction)
Jerrius Jubran (§)
Vineesha Kollipara
Holly Therese Korthas (distinction)
Jordan Dean Scott Krieg
Charlotte Lai
Drishti Lall
Sey Lee (§)
Connor James Leuck
Jeffrey Liao
Rebecca Lorsung (high distinction)
Zahra Ahmed Mahamed (§)
Katelyn Murray
Eric Kumar Nagarajan (distinction, summa cum laude)
Andre Daniel Nelson
Gunnar James Nemitz (high distinction)
Richard K Nguyen
Shantal Moraa Nyabwari (magna cum laude)
Alexander Charles O’Brien
Katrina Olson
Benjamin Parchem (distinction)
Sarah Leone Pippin
Gabrielle Lee Pluym (♦, §)
Madeline Mary Prosser
Abdul Qureshi
Andre Hollander Robinson
Tanisha Maria Ronnie
Anthony Rynes
Mitchell Sauder
William Schrader III
Benjamin Schram
Adam William Scott
Shivani Srikanth
Diksha Melkote Srishyla (summa cum laude, §)
Christopher Charles Stanley
Priya Tekriwal
Elizabeth Ting
Nikolas George Toman
Sanjana Sabu Varghese
Mara Kathryn Waaraniemi
Isique Yim Leej Yang (♦)
Xiaodan Yu

♦ = Dean’s Scholars  § = Community Engagement Scholar  ° = President’s Emerging Scholar
PLANT BIOLOGY
Lana Bolin (high distinction)  
Eva Louise Carlson  
Lewis French  
Christina Gengelbach (♦)  
Lea Caroline Graber  
Heather C Johnson  
Philip Paul Johnson (♦)  
Elizabeth Louise Sampson

MULTIPLE MAJORS
Riley Matthew Boeckman – Biochemistry; Genetics, Cell Biology and Development  
Kari Carlson – Biochemistry; Genetics, Cell Biology and Development  
Paul Douglas Fiesel (distinction) – Biochemistry; Plant Biology  
Anja Nicole Holtz – Ecology, Evolution and Behavior; Genetics, Cell Biology and Development  
Lisa Kathryn Linn – Ecology, Evolution and Behavior; Neuroscience  
Kunj Sunil Patel (distinction) – Genetics, Cell Biology and Development; Neuroscience  
Lyndsay Reese (distinction, summa cum laude) – Ecology, Evolution and Behavior; Genetics, Cell Biology and Development  
Camilo Rey Bedon – Biochemistry; Genetics, Cell Biology and Development  
Calandra Elizabeth Sagarsky – Biochemistry; Microbiology  
Aarushi Sarkari – Genetics, Cell Biology and Development; Neuroscience  
Zachariah Jacob Schultz – Genetics, Cell Biology and Development; Neuroscience  
Earl Parker Scott (high distinction, summa cum laude) – Genetics, Cell Biology and Development; Neuroscience  
Dimitrios Nikolaos Sidiropoulos – Biochemistry; Genetics, Cell Biology and Development  
Wyatt Wagner (high distinction) – Ecology, Evolution and Behavior; Genetics, Cell Biology and Development  
Caleb Nathaniel Walters – Genetics, Cell Biology and Development; Neuroscience  
Brian Joseph Wisnoski – Biochemistry; Genetics, Cell Biology and Development  
Qing Yang – Genetics, Cell Biology and Development; Microbiology
Research universities such as the University of Minnesota offer students the opportunity to do more than just learn about discoveries made by others. We encourage students to work with faculty to make discoveries of their own. We recognize students and their mentors who have embraced this opportunity and advanced the boundaries of human understanding.

Austin Abbott “Acoustic deterrents on Asian carp,” Faculty Mentor: Dr. Peter Sorensen

Lammi Aga “Mapping of Arabidopsis genes causal to variation in immunity against Pseudomonas syringae combinatorial effector strains,” Faculty Mentor: Dr. Fumiaki Katagiri

Sowda Ahmed “Development of a stable GFP-tagged cytomegalovirus,” Faculty Mentor: Dr. Mark Schleiss; “Analysis of Toys R Us mutant in Drosophila,” Faculty Mentor: Dr. Michael O’Connor

Haley Anderson “Epistasis of calmodulin genes and regulators of immunity in Arabidopsis thaliana,” Faculty Mentor: Dr. Jane Glazebrook

Shawn Anderson “Structural dynamics of calmodulin in the presence of a ryanodine receptor peptide,” Faculty Mentor: Dr. David D. Thomas

Hallie Anderson “The principle illnesses within the pediatric population in Cotacachi, Ecuador,” Faculty Mentor: Dr. Byron Albuja

Katherine Augspurger “Characterization of bop2 in Chlamydomonas,” Faculty Mentor: Dr. Mary Porter; “Characterization of Fla4 temperature sensitive Chlamydomonas mutant,” Faculty Mentor: Dr. Mary Porter

Caleb Ayers “Determining the structure of bovine serum albumin through chemical cross-linking and mass spectrometry,” Faculty Mentor: Dr. Yue Chen; “Forward genetic screen of aggressive thyroid cancers,” Faculty Mentor: Dr. David Largaespada; “Outcomes of blood stem cell transplantation in children with Hurler syndrome: a comparison between probands and their screened siblings,” Faculty Mentor: Dr. Weston Miller

Alec Baca “Replacing the Xist chromosome stability center with ASAR6,” Faculty Mentor: Dr. York Marahrens

Elizabeth Bade “Voluntary co-consumption of alcohol and nicotine: Effects of abstinence, intermittency, and withdrawal in mice,” Faculty Mentor: Dr. Anna Lee; “Expression differences of 5HT3 serotonin receptors in wild-type and knock-out PKC epsilon male and female mice,” Faculty Mentor: Dr. Anna Lee

Ashley Bartlett “Butterfly behavior,” Faculty Mentor: Dr. Emilie Snell-Rood; “Developmental gene regulation during mesoderm organ development in zebrafish,” Faculty Mentor: Dr. Yasuhiko Kawakami

Kelsie Becklin “Understanding the genetic mechanisms that drive osteosarcoma metastasis development,” Faculty Mentor: Dr. Branden Moriarity

Aaron Beczkiewicz “Quantification of resistance resulting from antimicrobial use in poultry production,” Faculty Mentor: Dr. Randall Singer
Erik Bensen  “Gombe baboon project,” Faculty Mentor: Dr. Craig Packer; “Starling signaling,” Faculty Mentor: Dr. David Stephens

Michael Berken  “Role of CCK Spinocerebellar ataxia Type 1,” Faculty Mentor: Dr. Harry Orr

Alexi Besser  “The stable carbon isotope analysis and paleoecology of miocene-aged paleosols from Kenya,” Faculty Mentor: Dr. David Fox; “The effects of interspecific interactions on resource partitioning between the red-backed vole and the meadow vole in northeastern Minnesota,” Faculty Mentor: Dr. Andrew Haveles; “Revisiting Lindeman’s work on Cedar Bog Lake using stable isotope analyses to study food web dynamics,” Faculty Mentor: Dr. Jacques Finlay

Michael Blazanin  “Experimental evolution of bacterial chemotaxis,” Faculty Mentor: Dr. Michael Travisano; “Real-time nitrous oxide and oxygen consumption by denitrifying bacteria,” Faculty Mentor: Dr. Satoshi Ishii; “Experimental evolution of bacterial motility in response to antagonist spatial structure,” Faculty Mentor: Dr. Michael Travisano

Jennifer Blum  “PqqC structural analysis,” Faculty Mentor: Dr. Carrie Wilmot; “K. Latis evolution and variability,” Faculty Mentor: Dr. Will Driscoll

Alexander Boettcher  “Natural activation of the neural reward and motivation circuit,” Faculty Mentor: Dr. Robert Meisel

Bruno Bohn  “Developing a Zika virus replicon,” Faculty Mentor: Dr. Robert Geraghty

Sarah Boneske  “Optimizing soil management to enhance potato crop yields and soil health in fumigated and non-fumigated soils,” Faculty Mentors: Dr. Linda Kinkel and Dr. Carl Rosen

Elizabeth Bonillo  “Interactions between tobacco-specific NNK,” Faculty Mentor: Dr. Lisa Peterson; “Dissecting natural mechanisms for genome content variation and the impact on phenotypic variation,” Faculty Mentor: Dr. Candice Hirsch

Kayla Brown  “The Mycobacterium avium subspecies paratuberculosis fur element’s interactions with an in vivo environment,” Faculty Mentor: Dr. Srinand Sreevatsan

Katherine Cahill  “Neural substrates of drug dependency,” Faculty Mentor: Dr. Jonathan Gerwirtz; “Neural substrates of memory,” Faculty Mentor: Dr. Jonathan Gerwirtz

Riley Capizzi  “Translational research in cognitive and affective mechanisms,” Faculty Mentor: Dr. Angus MacDonald III, Ph.D.

Eva Carlson  “Oaks of the Americas: Root morphological traits across a broad climate gradient,” Faculty Mentor: Dr. Peter Kennedy

Colin Catlin  “Flavor chemistry research in the FREC Lab,” Faculty Mentor: Dr. Devon Peterson; “Archeology of the Templum Pacis,” Faculty Mentor: Dr. Valerie Higgins

Erin Chappuis  “In vitro modeling of acute and chronic ischemia in cardiomyocytes,” Faculty Mentor: Dr. Rosemary Kelly; “Magnetic resonance imaging assessment of cardiac function in a swine model of hibernating myocardium three months following bypass surgery,” Faculty Mentor: Dr. Rosemary Kelly; “Darwin and money: The economic prelude to the Scopes Trial,” Faculty Mentor: Dr. Randy Moore

Matthew Christiansen  “Thalamic influence on the development of cortical interneurons,” Faculty Mentor: Dr. Yasushi Nakagawa
Erica Chung “Determining functionality of acid whey protein,” Faculty Mentor: Dr. Baraem Ismail; “Effects of carbon amendments on antibiotic inhibition and resistance phenotypes of soil Streptomyces,” Faculty Mentor: Dr. Linda Kinkel; “Nutritional genomics and disease prevention: a case for colorectal cancer,” Faculty Mentor: Dr. Charles Muscoplat

Levi Cole “Emotional regulation,” Faculty Mentor: Dr. Amanda Rueter

Alyssa Conell “Depression in the adolescent self,” Faculty Mentor: Dr. Karina Quevedo

Ina Conrado “Spatial and spatial temporal analysis of blastomycosis in Minnesota,” Faculty Mentor: Dr. Julio Alvarez

Nicholas Cook-Rostie “Protein carbonylation in adipocytes,” Faculty Mentor: Dr. Dave Bernlohr; “DNA repair mechanisms and chemotherapeutic resistance,” Faculty Mentor: Dr. Colin Campbell; “Pharmacokinetic profiles of melanoma metastasis chemotherapies,” Faculty Mentor: Dr. William Elmquist

Bridget Curtin “MicroRNAs as potential biomarkers for pediatric epilepsies,” Faculty Mentor: Dr. Reena Kartha; “Circulating microRNAs as potential biomarkers for epilepsy,” Faculty Mentor: Dr. Reena Kartha; “Diurnal regulation of circulating microRNAs as potential biomarkers for epilepsy,” Faculty Mentor: Dr. Reena Kartha

Jando Danial “Identifying the endonuclease that mediates the transferrin receptor’s mRNA stability,” Faculty Mentor: Dr. Gregory Connell; “Testing binding proteins that are good candidates for transferrin mRNA endonuclease,” Faculty Mentor: Dr. Gregory Connell

Anessa Demers “Inferring rodent diet from fossil tooth morphology,” Faculty Mentor: Dr. David Fox

Corinne Demler “Using the waggle dance to measure the relative attractiveness of reconstructed native prairies to honey bee foragers,” Faculty Mentor: Dr. Marla Spivak; “Determining whether translation of PVT1 increases tumorigenicity in human colon cancer cells,” Faculty Mentor: Dr. York Marahrens

Tracy Dinh “Genome editing to generate knock-out and FLAG-tagged mES cell lines,” Faculty Mentor: Dr. Rita Perlingeiro; “Structural study of DUX4 transcription factor,” Faculty Mentor: Dr. Hideki Aihara

Claire Donovan “Influence of cardiac arrest and cardiogenic shock on outcomes among 4,500 consecutive st elevation myocardial infarction patients,” Faculty Mentors: Dr. Scott Sharkey, MD and Benjamin Johnson, MD (Minneapolis Heart Institute Foundation)

Christine Egan “Role of non-nicotine tobacco constituents in the abuse liability of E-cigarettes,” Faculty Mentor: Dr. Andrew Harris; “Does self-compassion moderate changes in brain activity in depressed adolescents?” Faculty Mentor: Dr. Karina Quevedo

Mikayla Enger “Mapping of Arabidopsis genes causal to variation in immunity against Pseudomonas syringae combinatorial effector strains,” Faculty Mentor: Dr. Fumiaki Katagiri

Christian Erickson “Investigation into the relationship between Dayton Coal and Iron Co. and the historical Scopes Trial in Dayton, Tennessee,” Faculty Mentor: Dr. Randy Moore

Mason Fellmeth “Effects of dopamine receptor activation on the growth and development of striatal MSNs,” Faculty Mentor: Dr. Lorene Lanier

Paul Fiesel “Propagation of hybrid hazelnut for Minnesota,” Faculty Mentor: Dr. Jerry Cohen; “Regulation of auxin response and metabolism,” Faculty Mentor: Dr. Jerry Cohen
James Finn IV “Identifying regulatory mechanisms controlling activity of the 5'-nucleotidase UshA in *Shewanella oneidensis,*” Faculty Mentor: Dr. Peter Intile; “Determination of structural requirements for flavin adenine dinucleotide cleavage activity of the *Shewanella oneidensis* 5’ Nucleotidase UshA,” Faculty Mentor: Dr. Peter Intile

Kelly Fogelson “The role of potential LXR associated factors identified by mass spectrometry on lxr mediated gene transcription,” Faculty Mentor: Dr. Michael Garabedian; “Rethinking the role of episodic memory: The importance of goal processing dependent on time and value,” Faculty Mentor: Dr. Daniela Schiller

Nicole Folstad “Domesticating a new oil crop: Pennycress,” Faculty Mentor: Dr. M David Marks

Matthew Formanek “Comparative analysis of plant tissue preservation methods for the retrieval of barley yellow dwarf virus,” Faculty Mentor: Dr. Anita Krause; “Nutrient Network,” Faculty Mentor: Dr. Anita Krause

Madeline Freeman “Determining the role of HIV-1 accessory protein Vif in G2 cell cycle arrest,” Faculty Mentor: Dr. Reuben Harris; “Cellular basis of thalamic nuclei specification and organization using MADM technology,” Faculty Mentor: Dr. Yasushi Nakagawa

Alexandra Fuher “The suppressive role of FGFR on immunogenic cell death,” Faculty Mentor: Dr. Kaylee Schwertfeger

Mitchell Fuller “Phylogenetic tree construction of the clupeiformes genus,” Faculty Mentor: Dr. Simon; “Synthesis and cytotoxicological analysis of sulfamoylated nucleosides,” Faculty Mentor: Dr. Courtney Aldrich

Reid Gamble “Studies of HIV gp160 envelope protein structure: Molecular modeling of gp41 C-terminus,” Faculty Mentor: Dr. Garry Lynch (University of Sydney); “Analysis of psychosocial stressors and chronic psychological distress on preventative hypertension screenings in northern Thailand,” Faculty Mentor: Dr. Stephanie M Koning (University of Wisconsin-Madison); “Health behaviors and primary hypertension in northern Thailand: Age related effect on systolic and diastolic blood pressure,” Faculty Mentor: Dr. Supaporn Kanta (San Kamphaeng Sub-District Hospital)

Sri Vidhya Ganesh “Research experience in the Cognitive Development and Neuroimaging Laboratory,” Faculty Mentor: Dr. Kathleen Thomas; “Effects of hemispherectomy on social and emotional development in adolescent children,” Faculty Mentor: Dr. Kathleen Thomas

Laura Garbe “Mating experience and future mate choice in crickets,” Faculty Mentor: Dr. Marlene Zuk

Jesus Garcia Garcia “Observations and practical applications of Google Glass in a college setting,” Faculty Mentor: Dr. Magdalene Chalikia and Dr. Elizabeth Nawrot; “The effects of temperature on zebrafish exposed to ultraviolet radiation,” Faculty Mentor: Dr. Catherine Kirkpatrick

Christina Gengelbach “Plant gene immunity,” Faculty Mentor: Dr. Fumiaki Katagiri

Kate Geschwind “Gene expression identifies heterogeneity of metastatic behavior among gastrointestinal stromal tumors,” Faculty Mentor: Dr. Keith Skubitz; “Development of a biomarker profile for ovarian cancer using Proseek® Multiplex Plates,” Faculty Mentor: Dr. Amy Skubitz; “Designing a novel array of biomarkers for early detection of high-grade serous epithelial ovarian cancer,” Faculty Mentor: Dr. Amy Skubitz
Varshita Goduguchinta “PVT1 dependence and elimination in ovarian and breast cancer,” Faculty Mentor: Dr. Anindya Bagchi; “Clinical significance of pulmonary nodules in the pretransplant evaluation of liver transplant recipients with hepatocellular carcinoma,” Faculty Mentors: Dr. Srinath Chinnakontla and Dr. Oscar K Serrano; “Recovery from hypophosphatemia as a predictor of post-operative morbidity in live donor hepatectomy,” Faculty Mentors: Dr. Srinath Chinnakontla and Dr. Oscar K Serrano

Lea Graber “Antibiotic sensitivity of Wolbachia in Folsomia candida,” Faculty Mentor: Dr. Ann Fallon; “Exploring factors in honey bee choice of antimicrobial plant resins,” Faculty Mentor: Dr. Marla Spivak; “Investigating rhizobial populations associated with two divergent legume populations,” Faculty Mentor: Dr. Peter Tiffin

Aaron Grad “Proteomic detection of ovarian cancer biomarkers in routine pap tests,” Faculty Mentor: Dr. Amy Skubitz, Ph.D; “Prospective assessment of circulating tumor cells in women undergoing surgery for suspected ovarian cancer,” Faculty Mentor: Dr. Emil Lou; “Biomarkers with biological function in ovarian carcinoma,” Faculty Mentor: Dr. Amy Skubitz

Cameron Gray “Individual differences in morphine self administration in male rats,” Faculty Mentor: Dr. Jonathan Gewirtz; “RNA expression changes due to morphine administration in male and female rats,” Faculty Mentor: Dr. Jonathan Gewirtz

Anne Haakenstad “Glutamate pathways in hamster brain,” Faculty Mentor: Dr. Robert Meisel

Sara Habte “Stress and stress related health behaviors among East African immigrants,” Faculty Mentor: Dr. Mustafa al’Absi

Katherine Hamilton “Nitrate bioremediation,” Faculty Mentor: Dr. Lawrence Wackett

Amanda Hamrick “Establishment of convention in European starlings,” Faculty Mentor: Dr. Virginia Heinen; “The effect of cacao management intensity on mammal populations and canopy connectivity,” Faculty Mentor: Dr. Leonor Ceballos; “The effect of a takeover on juvenile Cercopithecus neglectus in Mathews Range,” Faculty Mentor: Dr. Nancy Moinde (Institute of Primate Research-National Museums of Kenya)

Juhui Han “The effect of 405-nm blue light on Pneumococcal otitis media,” Faculty Mentor: Dr. Geeyoun Kwon

Nadia Handler “Effects of increasing salt concentration on the accuracy of mass spectrometry,” Faculty Mentor: Dr. Adrian Hegeman

Heather Hanson “Post translational modifications of APOBEC3B at lysine residues,” Faculty Mentor: Dr. Reuben S Harris; “Susceptibility of A. Thaliana to P. syringae with different effectors,” Faculty Mentor: Dr. Fumiaki Katagiri

Hailey Haugen “Role of exosome signaling in cisplatin-induced neuropathy,” Faculty Mentor: Dr. Iryna Khasabova

Brea Heil “Behavioral patterns of zebrafish,” Faculty Mentor: Dr. Mark Masino

Rachel Heuer “Using the CRISPR/Cas nuclease system to induce glioma in mice,” Faculty Mentor: Dr. David Largaespada; “Testing the roles of hypoxia-inducible factor 1α, cyclin E2, enhancer of zeste homolog 2, and ubiquitin-conjugating enzyme E2C in glioblastoma models,” Faculty Mentor: Dr. David Largaespada

Hailey Hickey “microRNA 29 expression on fibrotic lung tissue,” Faculty Mentor: Dr. Peter Bitterman; “Invasion of CD26 positive and negative fibroblasts,” Faculty Mentor: Dr. Peter Bitterman
Elizabeth Hoke “Plant immunity genetics,” Faculty Mentor: Dr. Fumiaki Katagiri; “Comparing soil microbial communities,” Faculty Mentor: Dr. William Eaton

Daniel Holten “To determine how LAD-2/L1CAM translates guidance cue signals intracellularly,” Faculty Mentor: Dr. Lihsia Chen

Anja Holtz “Growth hormone as a novel target for hormone resistant breast cancer treatment,” Faculty Mentor: Dr. Heather Beckwith; “Growth hormone receptor characterization and function in triple negative breast cancers,” Faculty Mentor: Dr. Heather Beckwith; “Chamaecrista potential for adaptation, and its realization, in natural plant populations,” Faculty Mentor: Dr. Ruth Shaw

Sarah Hong “Determining the cause and effects of Smooth (SM) Morph persistence during settling selection in Pseudomonas fluorescens,” Faculty Mentor: Dr. Neal Jahren; “Determining the effects of cheating on bullseye morph fitness in Pseudomonas fluorescens,” Faculty Mentor: Dr. Neal Jahren

Drew Honson “Role of transcription factors and miRNAs in axolotl regeneration,” Faculty Mentor: Dr. Karen Echeverri; “Generation of polyomavirus gene transfer vectors in Escherichia coli,” Faculty Mentor: Dr. Nikunj Somia

Austin Hovland “Directed differentiation of human induced pluripotent stem cells toward an oligodendroglial lineage,” Faculty Mentor: Dr. James Dutton; “Spinal cord injury: Rose Bengal as a treatment to ablate glial scarring,” Faculty Mentor: Dr. Ann Parr; “Generation of SAUR gene mutants using CRISPR/Cas9 in Arabidopsis,” Faculty Mentor: Dr. Bill Gray

Michael Howe “Determination of a novel resistance mechanism to para-aminosalicylic acid in Mycobacterium tuberculosis”. Faculty Mentor: Dr. Anthony Baughn

Yinyin Huang “Investigate alkaloid gene cluster in the fungus Tolypocladium inflatum,” Faculty Mentor: Dr. Kathryn Bushley; “Obesity in zebrafish,” Faculty Mentor: Dr. Bao Vang-Dings

Hye In Hyun “Transtympanic photodynamic therapy for otitis media,” Faculty Mentor: Dr. Geeyoun Kwon

Scott Imberg “P. gingivalis affect on bone resorption and fetal birth weight,” Faculty Mentor: Dr. Massimo Costalonga; “P. gingivalis affect on bone resorption and fetal birth weight,” Faculty Mentor: Dr. Massimo Costalonga

Emily Iverson “Regulation of emotions in romantic relationships,” Faculty Mentor: Dr. Jeff Simpson

Madeline Jackson “Estimation of sediment denitrification rates in wild rice beds at Lake Itasca,” Faculty Mentor: Dr. Jim Cotner; “Human influence on antibiotic resistance in the fecal matter of Itasca rodents,” Faculty Mentor: Dr. Joe Whittaker; “Ontogenetic development of grey wolf crania revealed by geometric morphometric approaches,” Faculty Mentor: Dr. Kieran McNulty

Adam Jaspersen “Directional cell migration, organelle positioning,” Faculty Mentor: Dr. G.W. Gant Luxton

John Jenkins “Developing a system to study the neuromuscular junction in vitro using induced pluripotent stem cells,” Faculty Mentor: Dr. Rita Perlingeiro; “Construction of an inducible OLIG2 iRES-GFP vector to optimize neuronal differentiation,” Faculty Mentor: Dr. Rita Perlingeiro
Cole Jobin  “Feeding habits of lionfish,” Faculty Mentor: Dr. Aileen Maldonado

Philip Johnson  “Mapping Arabidopsis genes causal to variation in immunity against Pseudomonas syringae combinatorial effector strains,” Faculty Mentor: Dr. Fumiaki Katagiri; “Effect of light intensity on venation architecture of Arabidopsis thaliana,” Faculty Mentor: Dr. Jeannine Cavender-Bares

Jerrius Jubran  “How RoboScorpion effects fear and anxiety,” Faculty Mentor: Dr. David Redish; “How do female rats deal with delay-discounting tasks,” Faculty Mentor: Dr. David Redish

Krystina Kalland  “Transcriptomic analysis of sickle cell disease,” Faculty Mentor: Dr. Kalpna Gupta

Katherine Kelly  “Determining regulatory or related elements of the chiC gene and product in Pseudomonas aeruginosa strain UCBPP-PA14,” Faculty Mentor: Dr. Ryan C. Hunter; “Regulation of Pseudomonas aeruginosa virulence factors in response to products of oropharyngeal bacterial mucin fermentation,” Faculty Mentor: Dr. Ryan C. Hunter

Suboohi Khan  “Role of K117 ubiquitination of PCNA in human RPE and HCT116 cells,” Faculty Mentor: Dr. Anja Bielinsky

Trevor Killeen  “Dimethyl fumarate (DMF) and sickle cell disease,” Faculty Mentor: Dr. Gregory Vercellotti and Dr. John Belcher; “Heme, haptoglobin, and hemopexin levels in pediatric sickle cell patients,” Faculty Mentor: Dr. Gregory Vercellotti and Dr. John Belcher; “The complement system and sickle cell disease,” Faculty Mentor: Dr. Gregory Vercellotti and Dr. John Belcher

Kyutae Kim  “Idiopathic pulmonary fibrosis fibroblasts become resistant to Fas ligand-dependent apoptosis via the alteration of decoy receptor 3,” Faculty Mentor: Dr. Richard Nho

Kelsey Klingel  “Role of UGT2B19 and UGT1A4 in the glucuronidation of anatabine,” Faculty Mentor: Dr. Sharon Murphy

Vineesha Kollipara  “The effect of estradiol deficiency on apoptosis in skeletal muscle,” Faculty Mentor: Dr. Dawn Lowe

Holly Korthas  “Determining which estradiol receptor is involved in estradiol-mediated sensitization to cocaine in female rats,” Faculty Mentor: Dr. Paul Mermelstein; “Complex pitch perception in cochlear implants using vocoder simulations,” Faculty Mentor: Dr. Andrew Oxenham

Kiry Koy  “Associations between maltreatment duration and the neurobiology of self-reflection in depressed adolescents,” Faculty Mentor: Dr. Karina Quevedo

Christian Kraft  “Transferrin mRNA interactions contributing to iron homeostasis,” Faculty Mentor: Dr. Greg Connell

Kristine Kretman  “Evolution of multicellularity,” Faculty Mentor: Dr. Michael Travisano

Jordan Krieg  “NeuroLaw,” Faculty Mentor: Dr. Francis Shen

Alex Krona  “Coordinate RNA targeting during DNA damage in normal and malignant T Cells,” Faculty Mentor: Dr. Irina Vlasova-St Louis
Vivian Kuan “How Mab3 specifically binds target DNA motif,” Faculty Mentor: Dr. Hideki Aihara; “To produce the DNA-binding domain of both the wild type and mutant form of hMcm10 to compare the DNA binding capability and thermal stability of both,” Faculty Mentor: Dr. Hideki Aihara

Ashley Kue “X inactivation in mice,” Faculty Mentor: Dr. York Marahrens

Raj Kumar “Myogenic effects of ID4, ASCL1, and ASCL2,” Faculty Mentor: Dr. Atsushi Asakura

Fredy Kurniawan “Understanding the 3D structure of CDC45 protein,” Faculty Mentor: Dr. Hideki Aihara

Kelly Kwong “Determination of the genes under β-catenin control in immortalized human Schwann cells,” Faculty Mentor: Dr. David Largaespada; “Role of canonical Wnt-signaling in neurofibromatosis tumorigenesis,” Faculty Mentor: Dr. David Largaespada

Drishti Lall “Cognitive deficits and hippocampal changes in SCA1,” Faculty Mentor: Dr. Marija Cvetanovic; “Craniospinal abnormalities and imaging in patients with chromosome 22q11.2 deletion syndrome,” Faculty Mentor: Dr. Meysam Kebriaei

Jenny Lam “Alcohol and nicotine co-consumption in mice,” Faculty Mentor: Dr. Anna Lee

Audrey Lane “Diabetes burden following total pancreatectomy with auto-islet transplant (TPIAT),” Faculty Mentor: Dr. Melena Bellin

Alexander Lee “Roles of actin bundling protein 34 kDa in filopodia formation in Dictyostellium discoideum,” Faculty Mentor: Dr. Margaret Titus

Sey Lee “The role of Islamic faith leaders in the promotion of breast and cervical cancer screening in the Somali Minnesota community,” Faculty Mentor: Dr. Rebekah Pratt; “The effect of D-serine on retinal NMDA receptor function in serine racemase knockout mice,” Faculty Mentor: Dr. Robert Miller

Evelyn Leland “Regulation of the antiviral DNA cytosine deaminase APOBEC3H,” Faculty Mentor: Dr. Reuben Harris

Connor Leuck “Adolescent depression psychiatry research,” Faculty Mentor: Dr. Karina Quevedo

Huiyu Li “Quantifying gene expression of drug metabolizing enzymes and transporters in cervical and lymphatic compartments,” Faculty Mentor: Dr. Melanie Nicol; “The Horcrux-conversion of transit information into long-lasting responses in Escherichia coli,” Faculty Mentor: Dr. Jiandong Jiang; “CAM BOYS- Copper absorbing genetically engineered Escherichia coli,” Faculty Mentor: Dr. Jiandong Jiang

Jiawei Li “Targeting human normal cells with CRISPR/Cas9 dual nickase system,” Faculty Mentor: Dr. Anja-Katrin Bielinsky

Glydel Ann Lopez “Locating mir-241 enhancer region in Caenorhabditis elegans through the use of CRISPR/Cas9 technology and HDR repair system,” Faculty Mentor: Dr. Ann Rougvie

Amanda Lord “2015 plant immunity project,” Faculty Mentor: Dr. Fumi Katagiri; “Host immunity evasion in Burkholderia cenocepacia,” Faculty Mentor: Dr. Christian Mohr
Adam Lord “Biosynthetic pathway of pyrroloquinoline quinone (PQQ),” Faculty Mentor: Dr. Carrie Wilmot; “Host defense evasion by Burkholderia cenocepacia,” Faculty Mentor: Dr. Christian Mohr; “2015 plant immunity project,” Faculty Mentor: Dr. Fumiaki Katagiri

Rebecca Lorsung “Astrocyte-to-neuronal communication in a Parkinson's mouse model,” Faculty Mentor: Dr. Alfonso Araque; “Characterizing hypoxia damage and quantifying dystrophin complex proteins in Duchenne’s muscular dystrophy mouse model,” Faculty Mentor: Dr. DeWayne Townsend

Petra Lohert “The affect of transcription-coupled nucleotide excision repair in the repair of DNA-protein cross-links,” Faculty Mentor: Dr. Colin Campbell

Sarah Lucas “Exploring the use of bacterial toxin-antitoxin system in gene therapy,” Faculty Mentor: Dr. Mark Osborn; “MNtallica: Cleaning up heavy metal,” Faculty Mentors: Dr. Jeffrey Gralnick and Dr. Casim Sarkar; “Shifting gene drive into reverse: Now mosquitoes are the yeast of our worries,” Faculty Mentors: Dr. Jeffrey Gralnick and Dr. Casim Sarkar

Martha Machuchu “Mechanisms of ectomycorrhizal fungi symbiosis,” Faculty Mentor: Dr. Lotus Lofgren

Mackenzie Madsen “Quality of life in breast cancer survivors,” Faculty Mentor: Dr. Linda Koehler; “Pediatric neurorehabilitation,” Faculty Mentor: Dr. Bernadette Gillick

Zahra Mahamed “Predominance of DR3 in Somali children with Type 1 diabetes in the Twin Cities, Minnesota,” Faculty Mentor: Dr. Muna Sunni

Fadzai Manungo “Engineering of perhydrolase enzymes to be more resistant towards oxidation by peracetic acid,” Faculty Mentor: Dr. Romas Kazlauskas

Matthew Maple “Oxygen consumption deficit in Huntington disease mouse brain under metabolic stress,” Faculty Mentor: Dr. Janet Dubinsky

Clayton Mazur “Assessing the role of evolution in the motivation of Galápagos guides and tourists,” Faculty Mentor: Dr. Sehoya Cotner; “A new approach to course-based research using a hermit crab-hydrozoan symbiosis,” Faculty Mentor: Dr. Sehoya Cotner; “Investigating the swimming and predatory behaviors of a tintinnid ciliate, Schmidingerella sp., in response to high intensity sunlight (HIS),” Faculty Mentor: Dr. Suzanne Strom

Seth McGonigle “Engineering bi-specific killer engager cells/tri-specific killer engager cells,” Faculty Mentor: Dr. Daniel Vallera

Keegan McKye “Is selection for pathogen-inhibiting phenotypes influenced by long term differences in soil nutrient availability?” Faculty Mentor: Dr. Linda Kinkel

Michael Mekonnen “Plant immunity,” Faculty Mentor: Dr. Fumiaki Katagairi

Jacob Merritt “Retention prediction,” Faculty Mentor: Dr. Paul Boswell

Rebecca Meyer “Affects of temperature on monarch parasitoids,” Faculty Mentor: Dr. Karen Oberhauser; “Spatial structure of soil chemistry in forests,” Faculty Mentor: Dr. Jennifer Powers

Nicholas Mielke “PARP-1 complementation and its characteristics in human cells,” Faculty Mentor: Dr. Eric Hendrickson

Jia Mikuls “Virulence and phylogenetic analysis of Clavibacter michiganensis,” Faculty Mentor: Dr. Carol Ishimaru
Charles Miller  “The role of history on transition between multicellularity and unicellularity of *Saccharomyces cerevisiae*,” Faculty Mentor: Dr. Maria Rebolleda Gomez

Mary Minke  “Effect of long-term cannabis use on prefrontal structural development and risk-taking behavior in adolescents,” Faculty Mentor: Dr. Monica M Luciana;  “Association of THC effects on developing neuronal connectivity and presentation of psychosis in adolescents,”  Faculty Mentor: Dr. Monica M Luciana

Mahmoud Mire  “The effect of adhesin gene deletion on biofilm formation ability and adhesin regulation of *Streptococcus gordonii*,” Faculty Mentor: Dr. Brittany Nairn

Karishma Mistry  “Paravertebral block catheters improve post-operative pain control of right lobe hepatectomy in liver donors,”  Faculty Mentor: Dr. Srinath Chinnakotla

Joseph Monat  “3D printing biological materials,”  Faculty Mentor: Dr. Michael McAlpine

Kathryn Morris  “Sensitizing breast cancer cells to conventional chemotherapy with chemosensitizers,”  Faculty Mentor: Dr. Jayanth Panyam

Kristen Moua  “Role of the Xist locus and repetitive sequences in X-inactivation and X chromosome stability,”  Faculty Mentor: Dr. York Marahrens;  “Examining the role of telomeres in X-Inactivation via the formation of ringed X-chromosomes using CRISPR-Cas9,”  Faculty Mentor: Dr. York Marahrens

Cole Myers  “Metabolic response to trauma in elderly versus adult ICU patients,”  Faculty Mentor: Dr. Beth Lusczek

Eric Nagarajan  “Continuous control of a brain-computer interface to pursue a moving target,”  Faculty Mentor: Dr. Bin He

Motassem Nashawaty  “Evaluating the effects of retinoic acid on the pathophysiology of the heart,”  Faculty Mentor: Dr. Li-Na Wei

Motaz Nashawaty  “A comparison of long-term effects of recurrent and continuous neonatal hyperglycemia on hippocampal synaptogenesis,”  Faculty Mentor: Dr. Raghu Rao

Ashley Nelsen  “The role of microRNA-206 in the prevention of heptocellular carcinoma and non-alcoholic fatty liver disease development,”  Faculty Mentor: Dr. Guisheng Song;  “Investigating the psychometric properties of repeatedly assessed bio-behavioral markers for pain in non-verbal patients,”  Faculty Mentor: Dr. Frank Symons

Gunnar Nemitz  “The impact of progesterone and atomoxetine on cocaine reinstatement,”  Faculty Mentor: Dr. Marilyn Carroll

Sydney Newton  “Visible Heart Lab,”  Faculty Mentor: Dr. Paul Iaizzo;  “Scopes Trial Project,”  Faculty Mentor: Dr. Randy Moore

Linh Nguyen  “The role of cis-Hydroxyproline in leukemia,”  Faculty Mentor: Dr. Yue Chen

Chris Nguyen  “Collaborative biodegradation of aromatic hydrocarbons,”  Faculty Mentor: Dr. Lawrence P. Wackett

Michelle Nguyen  “ADAPT4U-after deployment: Adaptive parenting tools,”  Faculty Mentor: Dr. Abigail Gewirtz

Marissa Nolan  “Long-term consequences of prolonged ezh2 inhibition on human myeloma cell lines,”  Faculty Mentor: Dr. Brian Van Ness
Shantal Nyabwari  “Comparing and contrasting two forms of the category fluency task: A look at the “animal” and “vegetable” categories,” Faculty Mentor: Dr. Jose Pardo

Patrick O’Hare  “Cytotoxic stress in pancreatic cancer cells increases rates of cell-cell connections via tunneling nanotubes,” Faculty Mentor: Dr. Emil Lou; “Lost in translation: Applying 2D intercellular communication via tunneling nanotubes in cell culture to physiologically relevant 3D microenvironments,” Faculty Mentor: Dr. Emil Lou; “A Transwell assay that excludes exosomes for assessment of tunneling nanotube-mediated intercellular communication,” Faculty Mentor: Dr. Emil Lou

John Osborne  “The role of microRNA in osteosarcoma progression,” Faculty Mentor: Dr. David Largaespada; “Functional validation of candidate osteosarcoma genes,” Faculty Mentor: Dr. David Largaespada

Salah Osman  “Investigated CRABP1 activity in cancer cell lines deficient in CRABP1 expression,” Faculty Mentor: Dr. Li-Na Wei; “Investigate hormone (vitamin A and fatty acids) signaling pathways involving nuclear receptors and coregulators to trigger chromatin remodeling,” Faculty Mentor: Dr. Li-Na Wei; “Worked with malignant cell lines to assess CELF1 subcellular localization throughout the cell cycle,” Faculty Mentor: Dr. Irina St Louis

Tenzin Paljor  “The role of PhoY1 and PhoY2 in mycobacterium tuberculosis Pst/SenX3-RegX3 signal transduction complex,” Faculty Mentor: Dr. Anna Tischler

Benjamin Parchem  “Decision-making, fear learning, and altruism,” Faculty Mentor: Dr. Shmuel Lissek

Kunj Patel  “Lymphocyte generation from T-cell derived IPSC,” Faculty Mentor: Dr. Dharmeshkumar Patel

Thomas Paull  “CRISPR modification of mouse myoblasts to impair autophagy,” Faculty Mentor: Dr. Edgar Arriaga

Rachael Pearson  “Characterizing alcohol and nicotine addiction in mice,” Faculty Mentor: Dr. Anna Lee; “Minnesota precision and health initiative collaborative,” Faculty Mentor: Dr. Pamala Jacobson

Emily Pfieffer  “Visible Heart Lab,” Faculty Mentor: Dr. Paul A. Iaizzo; “UMN Bee Squad,” Faculty Mentor: Dr. Ana Heck

Kinsey Philips  “Effect of developmental lead exposure on butterfly cognitive processes,” Faculty Mentor: Dr. Emilie Snell-Rood; “Characterizing the biosynthetic pathway of ladderane lipids,” Faculty Mentor: Dr. Michael Freeman

Grant Piepkorn  “Chimpanzee panthoots,” Faculty Mentor: Dr. Michael Wilson; “Lion data,” Faculty Mentor: Dr. Craig Packer; “Prairie entomology,” Faculty Mentor: Dr. Karen Oberhauser

Sarah Pippin  “Central Nervous system involvement in patients with ulcerative colitis and Takayasu’s arthritis,” Faculty Mentor: Dr. Erika Horta

Kelly Popham  “The role of soil moisture in Arctic shrub expansion,” Faculty Mentor: Dr. Daniel Griffin

Solomon Poulose  “Lion behavioral analysis,” Faculty Mentor: Dr. Craig Packer; “Fungal infections of hops projects,” Faculty Mentor: Dr. Angela Orshinsky
Himal Purani “Elucidating the role of microRNAs in fatty liver disease and colorectal cancer proliferation,” Faculty Mentor: Dr. Clifford Steer and Dr. Guisheng Song; “Investigating the effects of exercise and hormonal contraceptives on smoking cessation,” Faculty Mentor: Dr. Alicia Allen

Natalya Rabets “Characterization of the MNC1 protein in Arabidopsis,” Faculty Mentor: Dr. Clay Carter

Santhosh Ramini “Diabetic induced cardiomyopathy,” Faculty Mentor: Dr. Paras K. Mishra

Sachin Rao “Determining the effects of noise on Hyla chrysoscelis mating preferences,” Faculty Mentor: Dr. Mark Bee

Melanie Raphael “Prion pathogenesis and the endocannabinoid system,” Faculty Mentor: Dr. Davis Seelig

Lyndsay Reese “Lion Lab database research,” Faculty Mentor: Dr. Craig Packer; “Drosophila germ line stem cells,” Faculty Mentor: Dr. Hiroshi Nakato

Timothy Reinders “Analysis of microbiome-host SNP Associations and the immune system profile,” Faculty Mentor: Dr. Ran Blekhman

Alexia Rodriguez “Utilizing herbarium specimens to understand the influence of climate change on phenological response of native Minnesota flora,” Faculty Mentor: Dr. George Weiblen; “Mass balance budget of nitrogen in tidal creeks of the Potomac River,” Faculty Mentor: Dr. Lora Harris

Charles Romlin “Evolving and comparing bacteria grown under different temperatures,” Faculty Mentor: Dr. James Cotner

Christian Rosenow “Effect of oxygen concentration on sulfide oxidation in aquatic microorganisms,” Faculty Mentor: Dr. Dan Jones; “Investigation of sulfide oxidizing bacteria in copper ore mining runoff,” Faculty Mentor: Dr. Dan Jones

Annamarie Rutledge “Investigating a local account of the Scopes Trial by the Minneapolis Daily Star,” Faculty Mentor: Dr. Randy Moore; “Inside the Galápagos highlands: Productivity of Coffea arabica in the presence of coffee rust and fire ants,” Faculty Mentor: Dr. Sehoya Cotner

Megan Ryan “The functional effect of CPVT-associated CaM mutants on RyR modulation,” Faculty Mentor: Dr. David D Thomas; “Validating a method of high-throughput screening for ryanodine receptor targeted therapeutics,” Faculty Mentor: Dr. Razvan L Cornea; “Validating a method of high-throughput screening for therapeutics of muscular dystrophy linked cardiomyopathy,” Faculty Mentor: Dr. David D Thomas

Calandra Sagarsky “Quantifying RNA-binding proteins at different cell cycle stages using SILAC,” Faculty Mentor: Dr. Irina St. Louis

Jill Sampson “Identification of signal sequences in ethanalamine utilization bacterial microcompartments,” Faculty Mentor: Dr. Sarah Perdue; “Eliminating colorectal cancer-related disparities among underserved communities in Minnesota,” Faculty Mentor: Dr. Charles Rogers

Elizabeth Sampson “Phenotypic divergence of geographically separated populations of Medicago lupulina in North America,” Faculty Mentor: Dr. Peter Tiffin; “Phenology and fruit choice of Drosophila suzukii in Minnesota,” Faculty Mentor: Dr. Chris Philips; “Machine vision of maize seedling growth and morphology,” Faculty Mentor: Dr. Cory Hirsch
Ashley Sanneman “X-linked X-ist locus and its role in cancer prevention,” Faculty Mentor: Dr. York Marahrens

Aarushi Sarkari “Genomics of plant defense,” Faculty Mentor: Dr. Jane Glazebrook; “Oxidative stress on butterfly organs,” Faculty Mentor: Dr. Emilie Snell-Rood; “Costs of learning and behavioural plasticity,” Faculty Mentor: Dr. Emilie Snell-Rood

Kersten Schmitt “Biology of the Galápagos,” Faculty Mentor: Dr. Deena Wassenberg

Nolan Schmitz “Characterizing the effects of inflammation on iron deficiency biomarkers in Ugandan children,” Faculty Mentor: Dr. Chandy John; “Loss of UHRF2 expression is associated with human neoplasia, promoter hypermethylation, decreased 5-hydroxymethylcytosine, and high proliferative activity,” Faculty Mentor: Dr. Timothy Hallstrom

Avonlea Schmitz “A proteomics analysis of the effects of overexpression of miRNA Cluster 17-92 in osteosarcoma cells,” Faculty Mentor: Dr. Anja Bielinsky

Madeline Schutte “Exploring the role of Nesprin-1 in nuclear positioning,” Faculty Mentor: Dr. Gant Luxton; “DYT Screening of TorsinA,” Faculty Mentor: Dr. Gant Luxton

Adam Scott “Restoration of D-Serine concentration levels in schizophrenic mouse model improves fERG and pERG signaling in the mouse retina,” Faculty Mentor: Dr. Robert Miller

Jordan Sell “Impact of 5FU chemotherapy on adenoviral replication in pancreatic cancer,” Faculty Mentor: Dr. Julia Davydova; “Small molecule modulation of troponin C to decrease sarcomere contractility,” Faculty Mentor: Dr. Joseph Metzger

Ashraf Shabaneh “Impact of microbiome secretome on colorectal cancer initiation and progression,” Faculty Mentor: Dr. Subree Subramanian

Jessica Shaklee “Directed evolution of synthetic protein library,” Faculty Mentor: Dr. Burckhard Seelig; “Validation of click chemistry with mass cytometry,” Faculty Mentor: Dr. Jop van Berlo

Patrick Shea “TRIM11 and TRIM22 mediated inhibition of human cytomegalovirus,” Faculty Mentor: Dr. Wade Bresnahan

Kelly Showel “DNA methylation on evolutionary timespan: Conservation of genomic sequence and epigenetic marks,” Faculty Mentor: Dr. Christopher Faulk

Dimitrios Sidiropoulos “BugBase: Inference of microbiome-wide complex traits for biological discovery,” Faculty Mentors: Dr. Dan Knights and Dr. Tonya Ward; “Primate Microbiome Project,” Faculty Mentors: Dr. Dan Knights and Dr. Ran Blekhman

Waogwende Song-Naba “Using DNA sequences to connect the distribution of mushrooms and their hyphae below ground,” Faculty Mentor: Dr. Nhu T Nguyen; “Analgesic effect of acute and chronic progesterone treatment on sickle cell mice,” Faculty Mentor: Dr. Kalpna Gupta

Shivani Srikanth “Brain functioning of adolescents with and without depression,” Faculty Mentor: Dr. Karina Quevedo

Diksha Srishyla “Effects of solid and liquid discretionary food sources on energy compensation,” Faculty Mentor: Dr. Mark Pereira; “Examining brain functional connectivity in Freidreich’s Ataxia using resting state fMRI,” Faculty Mentor: Dr. Christophe Lenglet; “A biomarker for autism spectrum disorder: Visual processing in emotion recognition,” Faculty Mentor: Dr. Suma Jacob
James Staats “MyoD null experiment,” Faculty Mentor: Dr. Linda McLoon
Clarissa Stiller “SLA and biochemical traits of trees as predictors of functional diversity,” Faculty Mentor: Dr. Jeannine Cavender-Bares
Nicholas Stokfisz “Bioactive coating for orthodontic appliances to prevent white spot lesions,” Faculty Mentor: Dr. Thorsten Gruenheid
Dave Sukharan “The immune reproduction trade-off and cricket life history,” Faculty Mentor: Dr. Marlene Zuk; “The unexplored power of social media for scientists,” Faculty Mentor: Dr. Axtell
Britt Swanson “Plant immunity,” Faculty Mentor: Dr. Fumiaiki Katagiri
Sebastian Swanson “Genetically altering the lithotrophic metabolism of mariprofundus ferrooxydans PV-1,” Faculty Mentor: Dr. Jeff Gralnick
Avalon Swenson “The Paracelsian philosophy of the world: Connecting the disciplines of medicine and science through the 17th century,” Faculty Mentors: Dr. Howard Louthan and Jole Shackelford; “Paracelsian religion,” Faculty Mentors: Dr. Howard Louthan and Jole Shackelford
Alex Tang “Plant responses to anthropogenic N deposition over the last century,” Faculty Mentor: Dr. Peter Kennedy; “Investigating the mechanisms structuring ectomycorrhizal fungal richness,” Faculty Mentor: Dr. Peter Kennedy
Alexa Temme “miRNAs in the treatment of metastatic liver cancer,” Faculty Mentor: Dr. R Scott McIvor
Kaila Thatcher “Creating a novel cell line characterized by the WAC knockout mutation,” Faculty Mentor: Dr. Tim Starr; “Modeling combination targeted therapy for colorectal cancer,” Faculty Mentor: Dr. Tim Starr; “Developing RecWay plasmids to model ovarian cancer,” Faculty Mentor: Dr. Tim Starr
Mallory Thomas “Effect of juvenile hormone exposure on butterfly life history traits,” Faculty Mentor: Dr. Emilie Snell-Rood; “Woodchip bioreactor remediation of agricultural wastewater using denitrifying bacteria,” Faculty Mentor: Dr. Michael Sadowsky
Elizabeth Ting “Integrative cognitive-affective therapy for binge eating disorder,” Faculty Mentor: Dr. Carol Peterson
Nikolas Toman “Zika virus: Targeting murine brain tumor cells,” Faculty Mentor: Dr. Walter Low
Cher Ling Tong “Fungi specificity to root system project,” Faculty Mentor: Dr. Nhu Nguyen; “Substrate specificity of histidine triad nucleotide binding protein 2,” Faculty Mentor: Dr. Carston R. Wagner
Jordan Treder “Neurodevelopmental cell culture,” Faculty Mentors: Dr. Michael Georgieff and Dr. Lorene Lanier
Madison Tschann “Role of mir210 in non-alcoholic fatty liver disease,” Faculty Mentor: Dr. Guisheng Song
Katherine Tyson “Adolescent brain development and alcohol exposure,” Faculty Mentor: Dr. Kathleen Thomas
Raghav Vadhul “Trafficking of Jagged-1 inside the cell,” Faculty Mentor: Dr. Sean Conner; “Undergraduate surgery interest group: A new venue for premedical student exposure to the field of surgery,” Faculty Mentor: Dr. James Harmon

Keianna Vogel “Role of the long non-coding RNA PVT1 in cancer,” Faculty Mentor: Dr. Anindya Bagchi

Wyatt Wagner “Undergraduate students can achieve proficiency in the fundamentals of laparoscopic surgery manual skills exam,” Faculty Mentor: Dr. Jeffrey Chipman; “Identifying cold resistance gene factors within maize genome,” Faculty Mentor: Dr. Nathan Springer; “Maintenance of mouse colony lines,” Faculty Mentor: Dr. Timothy Hallstrom

Gabriel Walker “Characterizing microbial communities in two lakes in the St. Louis River watershed using hgcA sequences,” Faculty Mentor: Dr. Daniel Jones, Jake Bailey

Alicia Wasti “Investigation of estrogen receptor β (ESR2) genetic variance in equine metabolic syndrome equines exposed to endocrine disrupting chemicals,” Faculty Mentor: Dr. Molly McCue

Jaclynn Wessling “Role of gp350 antibody in protection from EBV Infection in pediatric renal transplant recipients,” Faculty Mentor: Dr. Balfour Jr.

Sarah Whillock “Analyzing camodulin mutants,” Faculty Mentor: Dr. Gianluigi Veglia

Olivia Wicker “How B16 melanoma cells escape immune-mediated rejection,” Faculty Mentor: Dr. David Largaespada; “PELP1: A potential biomarker for breast cancer initiation,” Faculty Mentor: Dr. Julie Ostrander

Benjamin Wilke “Investigating MDH1 and its dependence on glutamine to regenerate cytosolic NAD required for glycolysis in cancer cells,” Faculty Mentor: Dr. Ameeta Kelekar

Brian Wisnoski “Addition of alpha-ketoglutarate to cancer induces a dependence on the one carbon metabolism pathway,” Faculty Mentor: Dr. Ameeta Kelekar

Kristen Woodhouse “Psychoactive drugs as a route to development of novel anti-parasitic agents,” Faculty Mentor: Dr. Jonathan Marchant; “Effects of antischistosomal drugs on planarian regeneration,” Faculty Mentor: Dr. Jonathan Marchant

Feier Xie “Plant immunity gene discovery,” Faculty Mentor: Dr. Fumiaki Katagiri

Qing Yang “Role of TRIM proteins against HCMV infection,” Faculty Mentor: Dr. Wade Bresnahan; “Role of mechanical forces in mitotic cell,” Faculty Mentor: Dr. Melissa Gardner; “Role of UNC-45A in destabilizing microtubule,” Faculty Mentors: Dr. Melissa Gardner and Dr. Martina Bazzaro

Cassandra Yee “Phytohormone biochemistry and molecular biology,” Faculty Mentor: Dr. Jerry Cohen

Samantha Young “Sal genes maintain the caudal progenitor zone and body axis extension by regulating retinoid acid clearance,” Faculty Mentor: Dr. Yasuhiko Kawakami;

Shira Zats “Epithelial cell cancer research,” Faculty Mentor: Dr. Anindya Bagchi; “Equine genetics and genomics laboratory: Looking into mechanics of various equine diseases,” Faculty Mentor: Dr. Molly McCue

Joel Zembles “Developing novel biosensors for serine/threonine kinases involved in cancer,” Faculty Mentor: Dr. Laurie Parker
Leanne Zhang “Investigating the genetic basis of rifampicin tolerance in mycobacteria,” Faculty Mentor: Dr. Anna Tischler

Jacob Zulk “Effect of ICP22 mutations on herpes simplex virus-1-directed RNA polymerase II changes and VICE domain formation,” Faculty Mentor: Dr. Stephen Rice; “Engineering Salmonella as an effective tumor-targeting agent,” Faculty Mentor: Dr. Daniel Saltzman