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D&P

Commencement



2003

COLLEGE OF

Biological Sciences

UNIVERSITY OF MINNESOTA

The mission of the College of Biological Sciences is to provide outstanding educational opportunities to undergraduate and advanced students and to carry out world-class research in areas of modern biology from the molecular level to the ecosystems. To accomplish this mission, we integrate a strong basic research program with both traditional and innovative classroom teaching and with intensive mentoring of students at all levels.

As part of its mission, the college is dedicated to providing basic biological science education and to sharing expertise with students and colleagues in other disciplines at the University of Minnesota, such as agriculture, engineering, health sciences, and liberal arts.

The college is committed to outreach to the general community and cooperation with other educational institutions. Members of the college actively participate in the scientific community and in the leadership of professional organizations, and they contribute to the administration and governance of the University.

PROGRAM

In consideration of others, please check now to make sure your cell phone is turned off during the ceremony.

ACADEMIC PROCESSION

Robert Sterner

Mace Bearer

Professor and Head

Department of Ecology, Evolution, and Behavior

Dr. Sterner received his Ph.D. from the University of Minnesota in 1986. After serving on the faculty of the University of Texas, he returned to the University in 1994, taking a position as professor in the Department of Ecology, Evolution, and Behavior. He has provided distinguished service as head of the department from 1999 to 2003 and we honor his contributions to the department and to the college.

WELCOME

Robert Elde

Dean, College of Biological Sciences

Dr. Elde was named dean of the University of Minnesota's College of Biological Sciences in 1995. A 1969 honors graduate of North Park College in Chicago with a Bachelor of Arts degree in biology and chemistry, he received his Ph.D. in anatomy from the University of Minnesota in 1974. He joined the University faculty twenty-five years ago and is now the J. B. Johnston Land Grant Professor of Neuroscience in the Department of Neuroscience.

GRADUATING STUDENT ADDRESSES

"Success through Collaboration"

Matthew Abdel and Charles Hernick

Mr. Abdel is a Biochemistry honors student who will be attending medical school in the fall of 2003. He has been involved with the Minnesota Student Association, Residence Hall Association, and Twin Cities Student Unions Board of Governors.

Mr. Hernick is an Ecology, Evolution, and Behavior major. He completed two independent research projects, one in Costa Rica and one with the USDA. He served as President of the Twin Cities Student Unions Board of Governors this past year.

“Life is a Journey”

Michelle Gleason

Ms. Gleason is a Genetics, Cell Biology and Development honors major who will be applying to medical school. She was Vice President of the Genetics, Cell Biology and Development Club, a UROP Award recipient and a volunteer at Fairview - University Medical Center.

AWARDS FOR TEACHING EXCELLENCE

Presented by Regent Dallas Bohnsack and Dean Elde

Stanley Dagley-Samuel Kirkwood Undergraduate Education Award

Claudia Neuhauser

Department of Ecology, Evolution, and Behavior.

After receiving her Ph.D. from Cornell University in 1990, Dr. Neuhauser taught at the University of Southern California and at the University of Wisconsin before joining the faculty of the University of Minnesota in 1996. She soon recognized that many biology students do not relate to the traditional engineering-based calculus. Therefore, she developed both a course and corresponding textbook, *Calculus for Biology and Medicine*, which has been enthusiastically received by students of biology here and at other universities.

Horace T. Morse - University of Minnesota Alumni Association Award for Outstanding Contributions to Undergraduate Education

Rob Brooker

Department of Genetics, Cell Biology, and Development

In the 17 years that he has been at the University of Minnesota, Dr. Brooker has taught thousands of students in traditional settings as well as via distance learning. He has also mentored more than 40 students as they conducted undergraduate research projects in his laboratory. His students praise Dr. Brooker's approachability and respect for them as learners, and consistently evaluate him as one of the very best teachers at the University of Minnesota.

Outstanding Performance as a Teaching Assistant

Brian Barber

Department of Ecology, Evolution, and Behavior

Mr. Barber's students value his enthusiasm for the material and his skill at listening to and answering their questions. They also note his extraordinary ability to help them see the relationships among complex ideas and information.

Ian Gilby

Department of Ecology, Evolution, and Behavior

Mr. Gilby's students value his ability to make long lab sessions fun as well as challenging. They also note his willingness to take students out of the classroom and "into the real world." His excellent mentoring abilities have helped many of his students be more successful.

Tanya Smutka

Department of Ecology, Evolution, and Behavior

Ms. Smutka's students value her organization, diligence, and high standards. They also note her ability to teach them using creative and memorable examples and to test their understanding with fair and interesting quizzes.

AWARDS FOR STUDENT LEADERSHIP

Donald Zander Award and President's Student Leadership and Service Award

Matthew Abdel

Biochemistry

The President's Student Leadership and Service Award

Charles Hernick

Ecology, Evolution, and Behavior

CONFERRAL OF OUTSTANDING ACHIEVEMENT AWARD

Presented by Regent Dallas Bohnsack and Dean Elde

Pearl Bergad

Ms. Bergad received a master's degree in biology from the University of Minnesota in 1969. She has since worked in a variety of research laboratories at the University, building a distinguished record of research and mentoring. During this time, she has also been a dedicated community volunteer with special interest in programs that promote the arts and serve senior citizens. As a result of her volunteer efforts, people of different cultures in the Twin Cities enjoy greater communication and understanding. Ms. Bergad was recognized by President Bush in 2002 as the "most outstanding volunteer from the Twin Cities."

COMMENCEMENT ADDRESS

"For the Greater Good..."

Christine Maziar

Executive Vice President and Provost

University of Minnesota

Dr. Maziar earned bachelor's, master's, and doctoral degrees from Purdue University. She served as a professor of electrical and computer engineering and vice provost at the University of Texas. In 1998, she came to the University of Minnesota, serving as Dean of the Graduate School and Vice President of Research. In June 2002, she assumed her current role as Executive Vice President and Provost, a position that is second only to the President of the University. In this position, Dr. Maziar is responsible for implementing the University's academic programs and priorities.

PRESENTATION OF THE CANDIDATES

John S. Anderson

Interim Associate Dean for Faculty and Academic Affairs

College of Biological Sciences

Dr. Anderson earned his Ph.D. from the University of Nebraska, Lincoln in 1963 and joined the faculty at the University of Minnesota in 1967. Dr. Anderson is Professor of Biochemistry, Molecular Biology and Biophysics and an award winning teacher of biochemistry. He also currently serves as Director of the General Biology Program and Co-Director of the Life Sciences Summer Undergraduate Research Program.

CONFERRAL OF THE DEGREES

Dallas Bohnsack

Regent, University of Minnesota

Dallas Bohnsack received his bachelor of science degree in plant industry in 1960 from the University of Minnesota's College of Agriculture. He recently retired as a self-employed farmer. He served as a Scott County commissioner and director of the New Prague Chamber of Commerce, and he remains very active in other community activities.

CONGRATULATIONS AND WELCOME

Phill Lawonn

President, Biological Sciences Alumni Society

Phill Lawonn graduated from the University of Minnesota in 1984 with a bachelor of science in microbiology. Phill is Manager of Analytical and Regulatory Services for Cellresin Technologies, LLC in St. Paul.

CLOSING REMARKS

Dean Robert Elde

HAIL! MINNESOTA

Led by Dean Robert Elde

Accompanied by Beacon Hill Brass

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 have completely exited the auditorium.

THE BACHELOR OF SCIENCE DEGREE

A foundation of liberal education is the guiding framework of all academic programs for undergraduate students on the 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 (about 30 courses), including courses in social sciences and humanities, history, chemistry, physics, and math, as well as in 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.

HONORS AND DISTINCTION DESIGNATIONS

Students in the College of Biological Sciences may graduate with Distinction, with Honors, or both, depending upon their grade-point average and the completion of an honors curriculum.

Graduation with Distinction is conferred to all students who have completed at least 60 credits at the University of Minnesota with a grade-point average of at least 3.900 (*high distinction*) or 3.750 (*distinction*).

Honors study is divided into two general parts. In the first and second years, the emphasis is on liberal education. Students who have completed at least three honors courses, a freshman seminar, and maintained a grade-point average of at least 3.5 during their first two years are indicated in this program by an asterisk (*). In the third and fourth years of study, the emphasis is on research experience and a two-semester honors seminar, which exposes students to the breadth of biological inquiry and promotes interactions among the honors students. Involvement in honors culminates in a written thesis and a research presentation at the Life Sciences Undergraduate Research Symposium. Students who complete the junior-senior part of the honors program graduate with a Latin Honors degree, based on the grade point average earned throughout their last 60 credits as follows: *summa cum laude* (at least 3.750), *magna cum laude* (at least 3.666), or *cum laude* (at least 3.500).

BIOCHEMISTRY

Matthew Philip Abdel (*summa cum laude, high distinction, **)

Shea Marie Anderson

Laura Kimberly Antos

Assih Atcholi

Michael Steven Bagan (*distinction*)

Solmaz Barazesh

Ola T-Chocolate Betiku

Shannon Gabrielle Bradley (*magna cum laude*)

Chinghsien Angel Chen (*distinction*)

Christopher James Hillard (*cum laude*)

Nathan Duane Hopp

Asma-UI-Bushra Jadran

James Ho-Ming Kong (*summa cum laude, **)

Judie Wanjiku Mbogua

Jennifer Alison McNabb (*summa cum laude, distinction, **)

Brendan Thomas O'Meara

Geoffrey Taylor Pletz (*)

Eric Patrick Rahrmann (*summa cum laude, distinction*)

Su Sie Ro

James Robert Ross (*summa cum laude, high distinction*)

Thomas John Sprynczynatyk

May-Shin Wang

Ryan Margaret Wilson

BIOLOGY

Olabisi C. Abdul
Jethe Ann Abraham
Jacob Paul Adelman
Zozan Ali Alsaadi
Jason Frank Aulie
Melissa May Baird
Jack Davitt Baldwin
Kamil Elie Barbour
William Simon Bartholome
Sara Jean Bekkerus
Laura Anne Biersdorff
Sonja Aldene Bindert
Arianne Marie Boldizar
Angela Leigh Bonnema
Nicole Marie Boyles
Genevieve Elizabeth Brau
Kevin John Brill
Imee Lynn Grecia Cambronero
Melissa Ann Carlin
Nicole Lauren Condon
Kyrstin Lee Dahl
Melissa Ann DeCrans
Zachary Blake Dirks (*distinction*)
Christopher Brian Doege
Jessica Anne Doran
Jessica Lyn Dreis
Mitchell Ward Ellingson
Stacy LeAnn Erickson

* completed freshman-sophomore honors program

BIOLOGY *continued*

Sara Lynn Feyereisn

Patrick Michael Fitzgerald

Daron Edward Ford

Jessi Ann Gabrelcik

Ryan Matthew Gajewski

Jaime Leigh Gallipo

Shelley Anne Gamm

Rebecca Lynn Gardner

Anthony Joseph Gentile

Jeff Benjamin Geske (*summa cum laude, high distinction, **)

Michael Edwin Giebenhain

Babatomwa Mobolaji Giwa

Rachel Anne Gramith (*cum laude, **)

Erin Heather Grund (*summa cum laude, distinction, **)

Shaylen Elizabeth Gustafson (*)

Robert Bruce Halstead

Julie Shou-chu Hang

Jennifer Lynn Hanson

Kristine Marie Hartmark

Trisha Lee Hawkins

Amy Jean Haworth

Nichja Lorraine Heimbuch

Matthew Paul Heinicke (*summa cum laude, distinction, **)

Scott Alan Helgesen

Andrew Allan Hollatz (*distinction*)

Nathan Alton Hollenbeck

Adam John Holzemer

Jacob Lee Hutchins (*distinction*)

Carrie Ann Kathleen Jacobsen (*distinction*)

BIOLOGY *continued*

Joseph Gregory Jacobsen

Neil Elliott Jensen

Nicholas Peter Jensen

Sarah Jo Jensen

Amy Lynne Johnson (*cum laude*)

Christopher Scott Johnson

Meghan Anne Jones

Elizabeth Rita Juba

Matthew Michael Koehler

Michael James Kilkelly (*summa cum laude, distinction, **)

Luke Robert Kocon

Kirsten Marie Kosloske

Anthony Derald Krentz

Joy Ann Kubarek

Erica Ann Kuhlmann

Elizabeth Ann Kult

Andrew Emil Kummer

Daniel John Kwapinski

Anne Marie Kyllander

Erek Matthew Lam (*distinction*)

Peter Abraham Matsumoto (*high distinction*)

Briony Ann Maxwell

Nathan David McLean

Sara Moassesfar (*summa cum laude, high distinction, **)

Ali Mokhtarzadeh (*summa cum laude, high distinction*)

Brent William Nelson (*summa cum laude*)

Katherine Mary Nicksich (*summa cum laude, high distinction, **)

Erin Shivaun Noss

Tiffany Ann Oie

* completed freshman-sophomore honors program

BIOLOGY *continued*

Katherine Leigh Peterson

Viengmor Phidavanh

Gretchen Kristina Janet Porisch

Anna Elizabeth Potvin

Benjamin Robert Rezny

Angela Joan Riss

James Stephen Rochford

Kimberly Ann Roeller

Rebecca Mair Rude

Amanda Louise Rudser

Shannon Sue Ryan

Kristin Ingrid Rygg

Jesse Allan Sandbulte

Shivanthi Sathanandan

Katie Lynn Schelling (*distinction*)

Nathaniel Jerome Thibodeau Schuldt

Kristen Cecile Seitz (*high distinction*)

Jeffrey Louis Simkins

Ryan John Sommers

Theresa Faye Steinke

Andrew Christian Stevens (*distinction*)

Jesse David Stringer

Christopher Neal Strong (*distinction*)

Sharon I-Chun Su

Sarah Michelle Swafford (*high distinction, **)

Cara Brienne Swanson-White

Samantha Kay Swenson

Ryan Levi Syverson

Sarah Beth Thompson

BIOLOGY *continued*

Andrea Marie Tix
Hanh Pham Tran
Kirsten Anne Vosen
Kate Marie Wang
Tzu-Fei Wang (*high distinction*)
Michael Julius Weisbrod (*)
Tressa Marie Witkop
Sheryl Jayne Wolertz
Aaron Curtis Zimmerman
Rachel Christina Zochert

ECOLOGY, EVOLUTION, AND BEHAVIOR

Stephen Russell Brotherson
Michael James Cochran
Sarah Marie Compton
Courtne Marie Cook
Rebecca Marie Gruber
Sasha Rae Hansen
Charles Alan Hernick
Kelly Dawn Hughes (*distinction*)
Andrea Rose Hyden
Kathleen Jane Johnson
Nana Maekawa
Wiyanna Lakota Morris
Julia Lynn Prokop
Dustin Alan Randall
Cecilia Anne Scheuerman
Michael Andrew Schwebach
Jennifer Laura Selvig (*distinction, **)

* completed freshman-sophomore honors program

ECOLOGY, EVOLUTION, AND BEHAVIOR *continued*

Matthew Roy Seroogy

Summer Kay Smith

Benjamin Robert Stading

Stephanie Joyce Swenson

Lisa Marie Swiecichowski

Amber Lynn Thompson (*distinction*, *)

Brock Andrew Verville

Robyn Ann Yechout

GENETICS, CELL BIOLOGY, AND DEVELOPMENT

Aparna Balasubramanyam

Melinda Joy Buck (*summa cum laude*, *distinction*)

Stephanie Patricia Budge

Ann Elizabeth Carlson

Anna Christine Cheesebrow

Zeina Ahmad Walid Dajani (*summa cum laude*, *distinction*)

Samanda Mary Durand

Sarah Armstrong Endrizzi (*magna cum laude*, *distinction*)

Michelle Kathleen Gleason (*summa cum laude*)

Melissa Kay Hart

Heidi Amin Abdel Kader

Kimberly Marie Klesk (*)

Michelle Marie Laberda

Candice Loretta Lewis

Travis Joseph Ling

Samy Mokhtar Maklad (*summa cum laude*)

Zofeyah Leanne McBrayer (*magna cum laude*)

Sean Edward McRoberts

GENETICS, CELL BIOLOGY, AND DEVELOPMENT *continued*

Timothy James Nice (*summa cum laude, distinction, **)

Becky Jill Ostroski

Aimee Anne Pick (*distinction*)

Nishta Rao

Mark Charles Roberts

Mohamed Samy Saleh (*distinction*)

Roberta Ann Sislo (*cum laude*)

Jennifer Ann Slostad

Erikka Jeanne Torp

Nelly Anotonio Trujillo

Kathryn Mary Tupy (*)

Sarah McBride Wallraff

Rebecca Kay Willaert

Matthew Charles Zamzow

Philip Ward Zimmerman (*)

MICROBIOLOGY

Parvia Kanika Ahmed

Britt Marie Anderson

Jordan Edward Eggers

Caroline Ugochukwu Eneh

John Adam Ferguson

Brian Paul Finstad

Jason Dean Fowler (*high distinction*)

Peter Aaron Gillis

Bridget Lynn Johnson

Angela Marie Kraska

Matthew Stephen Larson (*high distinction*)

* completed freshman-sophomore honors program

MICROBIOLOGY *continued*

Japs Ann Lee

Andrew Carl Murray

Julia Nguyen

Rodrigo C. Perez

Holly Lynn Scherber

Nicole Lea Sullivan

Kenji Takamura

Beth Kristine Thielen (*summa cum laude, high distinction, **)

Michelle Dawn Walz

Daniel Eric Westholm (*distinction*)

John Chan Yick

Ryan Sondra Yurecko (*distinction*)

NEUROSCIENCE

Callie Lynne Berg

Vanessa Marie Carels

Mark Steven Carlson

Benjamin David Clark

Brian Dean Clark (*summa cum laude, distinction, **)

Matthew Beau Dufek

Joshua Paul Froman (*distinction, **)

Taqee Ahmed Khaled

Jessica Ann Laurence

Jessica Catherine Losby

Jodi Lynn Lukkes

Jessie Irene Luoma

Lisa Janette McGinnis

Aaron Christian Overland

NEUROSCIENCE *continued*

Paul Owen Phelps

Heidi Elaine Skoog (*cum laude*)

Claire Suzanne Smith

Ramon Ramirez Villanueva

Eun-Ji Yoo

PLANT BIOLOGY

Kelly Rose Curran

Dillon Jacob Hougen Fried

Laura Kristen Heitman

MULTIPLE MAJORS

Kara Jo Gleason

Biochemistry, Microbiology

(summa cum laude)

Bernard Nathaniel Hall

GCD, Microbiology

Gregory James Hatlestad

Biochemistry, GCD, Plant Biology

Dale Lynn Johnson

EEB, Microbiology

Terra Anne Jones

GCD, Neuroscience

Alicia Gwen Konsor

Plant Biology, EEB

Amy Laura Kullas

Microbiology, GCD

Bryan Christopher Nikolai

GCD, Biochemistry

Jacob Andrew Thompson

GCD, Biochemistry (*)

Hailun Wang

GCD and Biochemistry

* completed freshman-sophomore honors program

UNDERGRADUATE RESEARCH

Research universities such as the University of Minnesota offer students the opportunity to do more than just learn about discoveries made by others. Our students can partner with faculty to make discoveries of their own. We recognize our students and their mentors who have embraced this opportunity and pushed forward the boundaries of human understanding.

Researcher: Matthew Philip Abdel
Project: Utilization of yeast two hybrid technique to detect protein-protein interactions with the product of the candidate leukemia gene, RasGRP2
Mentor: David Largaespada, Genetics, Cell Biology, & Development

Researcher: Olabisi C. Abdul
Project: Muscle force production and aging
Mentor: Vincent Barnett, Physiology

Researcher: Britt Marie Anderson
Mentor: Michael Sadowsky, Microbiology

Researcher: Laura Kimberly Antos
Mentor: Lincoln Potter, Biochemistry, Molecular Biology, & Biophysics

Researcher: Assih Atcholi
Project: Characterization of 120 KDa protease secreted by human prostate cells in culture
Mentor: Michael Wilson, Laboratory Medicine & Pathology

Researcher: Michael Steven Bagan
Mentor: Colin Campbell, Pharmacology

Researcher: Callie Lynne Berg
Project: Use of cessation products for smokeless tobacco users
Mentor: Dorothy Hatsukami, Psychiatry

Researcher: Ola T-Chocolate Betiku
Project: *In situ* Diels-Alder reactions of maleimides with cyclic ketones and nitrogen heterocycles to give tetrahydrocarbazoles
Mentor: Wayland Noland, Chemistry

Researcher: Sonja Aldene Bindert
Project: The characterization of microsatellite gene markers in *Drosophila melanogaster*
Mentor: Nuzha Tahoe, Ecology, Evolution, & Behavior

Researcher: Shannon Gabrielle Bradley
Project: Expression levels of α -crystallin in young and old rat retinal pigment epithelium
Mentor: Deborah Ferrington, Ophthalmology

Researcher: Melinda Joy Buck
Project: Using heat shock protein 70 with breast cancer peptides to activate cytotoxic T cells
Mentor: Christopher Pennell, Laboratory Medicine & Pathology

Researcher: Vanessa Marie Carels
Project: The neuromuscular control of grasp
Mentor: Martha Flanders, Neuroscience

Researcher: Ann Elizabeth Carlson
Project: The pathogenesis of osteochondrosis in horses
Mentor: Cathy Carlson, Veterinary Diagnostic Lab

Researcher: Mark Steven Carlson
Mentor: Charles Nelson, Child Development

Researcher: Anna Christine Cheesebrow
Project: Viral dsRNA as a mediator of chronic muscle disease
Mentor: Patricia Tam, Medicine Rheumatology

Researcher: Chingsien Angel Chen
Mentor: Catherine Verfaillie, Medicine

Researcher: Benjamin David Clark
Mentor: Christopher Honda, Neuroscience

Researcher: Brian Dean Clark
Project: Effects of vitamin E on memory in a transgenic mouse model of Alzheimer's disease
Mentor: Karen Ashe, Neurology

Researcher: Zeina Ahmad Dajani
Project: Managing the evolution of insect resistance to transgenic crops
Mentor: Donald Alstad, Ecology, Evolution, & Behavior

Researcher: Matthew Beau Dufek
Project: Dolphin learning and behavior and reef ecosystems
Mentor: Frank Barnwell, Ecology, Evolution, & Behavior

Project: Immunization therapy for nicotine abuse and effects of nicotine vaccination on fetal development and distribution
Mentors: Paul Pentel & Daniel Keyler, Hennepin County Medical Center

Researcher: Samanda Mary Durand
Mentor: Rob Brooker, Genetics, Cell Biology, & Development

Researcher: Jordan Edward Eggers
Mentor: Jon Powell, Plant Pathology

Researcher: Mitchell Ward Ellingson
Project: Cognitive development of infants of diabetic mothers
Mentor: Charles Nelson, Child Development

- Researcher:** Sarah Armstrong Endrizzi
Project: Potential speciation of goldenrod fly (*Eurosta solidaginis*)
Mentor: Susan Weller, Entomology
- Researcher:** Stacy LeAnn Erickson
Project: Involvement of B-type cyclins and Pds1 in regulation of the S phase checkpoint of *Saccharomyces cerevisiae*
Mentor: Duncan Clarke, Genetics, Cell Biology, & Development
- Researcher:** John Adam Ferguson
Project: Use of rep-PCR in *Escherichia coli* watershed pollution source Tracking in the Duluth Area
Mentor: Michael Sadowsky, Microbiology
- Researcher:** Brian Paul Finstad
Project: Growth and isolation of reovirus reassortants from strains Dearing and Jones
Mentors: Leslie Schiff & and Jennifer Smith, Microbiology
- Researcher:** Patrick Michael Fitzgerald
Project: Gap Junctions: What is the function of connexin 43 hemichannels in dye uptake?
Mentor: Ross Johnson, Genetics, Cell Biology, & Development
- Researcher:** Daron Edward Ford
Project: Synthesis of pyrrole dimers as a route to potential antitubercular compounds
Mentor: Wayland Noland, Chemistry
- Researcher:** Jason Dean Fowler
Project: Chromatin decondensation activity, purification and characterization
Mentor: Nobuaki Kikyo, Medicine
- Researcher:** Dillon Jacob Hougen Fried
Mentor: Neil Olszewski, Plant Biology
- Researcher:** Ryan Matthew Gajewski
Project: Telomerase fidelity in *Paramecium tetraurelia*
Mentor: Daniel Romero, Pharmacology
- Researcher:** Anthony Joseph Gentile
Project: Model for molecular mechanism for light perception in *Arabidopsis thaliana* as predicted through elongated hypocotyll mutations
Mentor: Brian VanNess, Genetics, Cell Biology, & Development
- Researcher:** Jeff Benjamin Geske
Project: Echocardiographic, angiographic and algorithmic preoperative prediction of aortic Valve annulus size for prosthetic valve placement
Mentor: Richard Bianco, Surgery

Researcher: Kara Jo Gleason
Project: Characterization of hamster N-acetyltransferase using site directed mutagenesis
Mentor: Carston Wagner, Medicinal Chemistry

Researcher: Michelle Kathleen Gleason
Project: Investigation of the structure-function relationship of the transmembrane protein lactose permease of *Escherichia coli*
Mentor: Rob Brooker, Genetics, Cell Biology, & Development

Researcher: Rachel Anne Gramith
Project: Effects of endogenous xanthenes on the phosphorylation of glucose in the human liver
Mentor: Nacide Ercan-Fang, Medicine

Project: Functional Electrical Stimulation
Mentor: William Durfee, Mechanical Engineering

Researcher: Rebecca Marie Gruber
Project: Monitoring Mississippi River water quality using an arthropod biotic index
Mentor: Ralph Holzenthal, Entomology

Researcher: Erin Heather Grund
Project: Quantitation of glomerular cells
Mentors: Michael Mauer & John Basgen, Pediatrics

Researcher: Julie Shou-chu Hang
Mentor: Georgiana May, Ecology, Evolution, & Behavior

Researcher: Melissa Kay Hart
Mentor: Arkady Khodursky, Genetics, Cell Biology, & Development

Researcher: Kristine Marie Hartmark
Project: Exploring the causes of the observed slow degradation of pollen grains mounted in microscope slides
Mentor: Edward Cushing, Ecology, Evolution, & Behavior

Researcher: Nichja Lorraine Heimbuch
Project: Functional analysis of GSK3 and its role in regulation of flagellar length in *Chlamydomonas*
Mentor: Pete Lefebvre, Plant Biology

Researcher: Matthew Paul Heinicke
Project: Morphological variation in the optic tecta of *Hyla chrysoscelis* and *Hyla versicolor*, the gray treefrogs
Mentor: Daniel Meinhardt, Genetics, Cell Biology, & Development

Researcher: Charles Alan Hernick
Project: Distribution and host species ranges of *Umbonia ataliba* and *Umbonia crassicornis* and the potential for interspecific competition
Mentor: David Tilman, Ecology, Evolution, & Behavior

- Researcher:** Christopher James Hillard
Project: Effects of metformin on fructose-2,6-bisphosphate levels in liver cells
Mentor: Alex Lange, Biochemistry, Molecular Biology, & Biophysics
- Researcher:** Kelly Dawn Hughes
Project: Change in distribution, species richness, and genera richness of fresh water mussels of the MN River (1880-2000)
Mentor: Susan Weller, Entomology
- Researcher:** Jacob Lee Hutchins
Mentor: Richard Bianco, Surgery
- Researcher:** Andrea Rose Hyden
Mentor: David Andow, Entomology
- Researcher:** Asma-Ul-Bushra Jadran
Project: Analytical chemistry: fats and lipids in foods
Mentor: Sue Lee, General Mills
- Researcher:** Carrie Ann Kathleen Jacobsen
Project: Biocomplexity Project
Mentor: Donald Alstad, Ecology, Evolution, & Behavior
- Researcher:** Joseph Gregory Jacobsen
Project: Species identification and nomenclature of Mexican snakes and lizards in the Bell Museum of Natural History's herpetology collection
Mentor: Andrew Simons, Fisheries & Wildlife; Bell Museum
- Researcher:** Neil Elliott Jensen
Project: PAG Axons and Opiate Analgesia
Mentor: Martin Wessendorf, Neuroscience
- Researcher:** Amy Lynne Johnson
Project: Analysis of genes coding for group a streptococcal M-Protein and pyrogenic exotoxins: a 45-year perspective
Mentors: Edward Kaplan & Dwight Johnson, Pediatrics
- Researcher:** Bridget Lynn Johnson
Project: The characterization of the cable pili's role in infection of *Burkholderia cepacia*
Mentor: Chris Mohr, Microbiology
- Researcher:** Christopher Scott Johnson
Project: Monitoring whitetail deer populations in the Cedar Creek Natural History Area (CCNHA) using infrared detection devices
Mentor: Anne Pusey, Ecology, Evolution, & Behavior
- Researcher:** Dale Lynn Johnson
Mentor: James Cotner, Ecology, Evolution, & Behavior

Researcher: Kathleen Jane Johnson
Project: Probable identification of the *Empidonax alnorum* and *E. traillii* flycatchers using spectral analysis
Mentor: Robert Zink, Ecology, Evolution, & Behavior

Researcher: Terra Anne Jones
Mentor: Janet Dubinsky, Neuroscience

Researcher: Heidi Amin Abdel Kader
Project: Forced-Limb use: a treatment for Parkinson's disease
Mentor: Paul Tuite, Neurology

Researcher: Taqee Ahmed Khaled
Mentor: Martin Wessendorf, Neuroscience

Researcher: Michael James Kilkelly
Project: The creation of an intergeneric gene transfer system between *E. coli* and filamentous strains of cyanobacteria
Mentor: David Sherman, Microbiology

Researcher: James-Ho Ming Kong
Project: Biodegradable polymers: palladium catalysts for lactide polymerization
Mentors: Marc Hillmyer & William Tolman, Chemistry

Researcher: Alicia Gwen Konsor
Project: Lichen as air quality indicators
Mentor: Clifford Wetmore, Plant Biology

Researcher: Angela Marie Kraska
Project: The antibiotic resistance and genomic studies of *Salmonella* Newport
Mentor: Kakambi Nagaraja, Veterinary Pathobiology

Researcher: Joy Ann Kubarek
Project: Effects of human fragmentation on dragonfly species
Mentors: Jeannette Martinez & Claudia Neuhauser, Ecology, Evolution, & Behavior

Researcher: Amy Laura Kullas
Project: A new member of the *RIM101* pathway links alkaline sensing and endocytosis
Mentor: Dana Davis, Microbiology

Researcher: Michelle Marie Laberda
Project: RNA interference to explore the role of the transcription factor HDAC6 on development
Mentor: Jennifer Westendorf, Cancer Center

Researcher: Todd Edward Lanis
Project: GFAP in autistic subjects
Mentor: Bagrat Amirikian, Neuroscience

Researcher: Jessica Ann Laurence
Mentor: S. Hossein Fatemi, Psychiatry

Researcher: Japs Ann Lee
Project: Proteomic approaches to the identification of proteins secreted by brain tumors
Mentor: Walter Low, Neurosurgery

Project: The regulation of IL-6 in prostate cancer
Mentor: Yun Qiu, Laboratory Medicine & Pathology

Researcher: Candice Loretta Lewis
Project: Effect of connexin-43 mutations on cell communication
Mentor: Ross Johnson, Genetics, Cell Biology, & Development

Researcher: Jessica Catherine Losby
Project: Finding molecular markers for mental disorders
Mentor: S. Hossein Fatemi, Psychiatry

Researcher: Jodi Lynn Lukkes
Project: The regulation of Kv4/KChIP potassium channels by protein kinases and phosphatases
Mentor: Linda Boland, Neuroscience

Researcher: Jessie Irene Luoma
Project: Insulin growth factor and myosin expression patterns in extraocular muscle
Mentor: Linda McLoon, Ophthalmology

Researcher: Holly Alyssa MacCormick
Mentor: Craig Packer, Ecology, Evolution, & Behavior

Researcher: Lisa Janette McGinnis
Project: Analysis of protein expression in bile duct primary afferents in relation to pain
Mentor: Glenn Giesler, Neuroscience

Researcher: Nana Maekawa
Project: Foraging behavior of *Ardea cinerea* in different environments
Mentor: Anne Pusey, Ecology, Evolution, & Behavior

Researcher: Sammy Mokhtar Maklad
Project: Mechanisms of cytoprotection in pig endothelial cells
Mentor: Agustin Dalmaso, Surgery

Researcher: The effects of Trychostatin A on the transcription of thyroid hormone in rodent hepatocytes
Project:
Mentor: Grant Anderson, Medicine, Endocrinology

Researcher: Judie Wanjiku Mbogua
Project: TGFB/Smad signalling pathway
Mentor: William Dayton, Animal Science

Researcher: Zofeyah Leanne McBrayer
Project: Red hot chili peppers and alopecia areata
Mentors: Marna Ericson & Maria Hordinsky, Dermatology

Researcher: Nathan David McLean
Mentor: Paul Iaizzo, Anesthesiology

Researcher: Jennifer Alison McNabb
Project: HuA and tristetraprolin compete for binding to a subset of AU-rich element containing transcripts and a global analysis of mRNA decay in normal versus malignant human T lymphocytes
Mentor: Paul Bohjanen, Microbiology

Researcher: Sara Moassesfar
Project: Studying powdery mildew-*Medicago* interactions by Expression Profiling
Mentors: Nevin Young & Dariush Danesh, Plant Biology

Researcher: Ali Mokhtarzadeh
Project: Quantitation comparison of total RNA levels at different ages of adult *Drosophila melanogaster*
Mentors: James Curtsinger & Nuzha Tahoe, Ecology, Evolution, & Behavior

Researcher: Andrew Carl Murray
Project: Extraintestinal virulence factors predict *Escherichia coli* colonization patterns among human and animal household members
Mentor: James Johnson, VA Medical Center

Researcher: Brent William Nelson
Project: Antioxidant oil augments cytotoxic immune response to attenuated *Salmonella typhimurium*
Mentor: Daniel Saltzman, Surgery

Researcher: Julia Nguyen
Mentor: Gregory Vercellotti, Medicine

Researcher: Timothy James Nice
Project: Role of beta-catenin in thymic positive selection
Mentor: Kristin Hogquist, Laboratory Medicine & Pathology

Researcher: Katherine Mary Niksich
Project: Determining normal ultrasonographic motility patterns in the horse
Mentor: Erin Malone, Clinical and Population Sciences

Researcher: Erin Shivaun Noss
Project: Monoclonal antibody research using GFP mice
Mentor: Marc Jenkins, Microbiology

Researcher: Brendan Thomas O'Meara
Project: Comparison of maize tubulins: treatment with chlorpropham
Mentor: Sue Wick, Plant Biology

Researcher: Becky Jill Ostroski
Project: SNP Development for Integrative Mapping in the Turkey (*Meleagris gallopavo*)
Mentor: Kent Reed, Veterinary Pathobiology

Researcher: Paul Owen Phelps
Mentor: Apostolos Georgopoulos, Neuroscience

Researcher: Aimee Anne Pick
Project: Cancer gene therapy
Mentor: David Largaespada, Genetics, Cell Biology, & Development

Researcher: Eric Patrick Rahrman
Project: Differentiation of canine multipotent adult progenitor cells into cardiomyocyte-like cells
Mentors: Catherine Verfaillie & Beatriz Pelacho, Medicine

Researcher: James Robert Ross
Project: Identification of adipocyte lipid binding protein (ALBP) interacting proteins using yeast two-hybrid analysis
Mentor: David Bernlohr, Biochemistry, Molecular Biology, & Biophysics

Researcher: Rebecca Mair Rude
Mentor: Anne Pusey, Ecology, Evolution, & Behavior

Researcher: Kristin Ingrid Rygg
Mentor: Daniel Halvorsen, Physiology

Researcher: Mohamed Samy Saleh
Project: Accumulation of spontaneous mutations in *Arabidopsis*
Mentor: Ruth Shaw, Ecology, Evolution, & Behavior

Researcher: Cecilia Anne Scheuerman
Project: Mortality and spatial distribution of the invasive green crab, *Carcinus maenas*: effect of the blue crab
Mentor: Paul Jivoff, Rutgers University Field Station

Project: Border patrol and intergroup encounter identification and the effects of party composition
Mentor: Anne Pusey, Ecology, Evolution, & Behavior

Researcher: Nathan Jerome Schuldt
Project: Genomic analysis of light response phenotypes in *Arabidopsis thaliana*
Mentor: Peter Tiffin, Plant Biology

Researcher: Michael Andrew Schwebach
Project: Determination of host fish requirements of the mapleleaf mussel, a surrogate for the federally endangered winged mapleleaf mussel
Mentor: Mark Hove, Fisheries and Wildlife

Researcher: Roberta Ann Sislo
Project: A defective cytokinesis mutant in *Chlamydomonas reinhardtii*
Mentors: Carolyn Silflow & Pete Lebevre, Plant Biology

Researcher: Heidi Elaine Skoog
Project: Cutaneous hyperalgesia in a rat model
Mentor: Donald Simone, Oral Science

Researcher: Jennifer Ann Slostad
Project: Cross-cultural medicine in the Latino communities of Minnesota
Mentor: Hernán Vidal, Spanish & Portuguese

Researcher: Theresa Faye Steinke
Mentor: R. Scott McIvor, Genetics, Cell Biology, & Development

Researcher: Andrew Christian Stevens
Project: The function of mammalian polycomb genes in the pathogenesis of leukemias and lymphomas
Mentor: Kim-Sue Tudor, Laboratory Medicine & Pathology

Researcher: Jesse David Stringer
Project: Investigation of evolutionary trends in maize herbivore defense
Mentor: Peter Tiffin, Plant Biology

Researcher: Sharon I-Chun Su
Project: Mechanism of naltrexone hepatotoxicity
Mentor: Rory Rimmel, Medicinal Chemistry

Researcher: Cara Brienne Swanson-White
Project: *In situ* tetramer staining of SIV specific T cells
Mentor: Ashley Haase, Microbiology

Researcher: Lisa Marie Swiecichowski
Project: Is inhibin a possible indicator of the success of superovulation in cows?
Mentor: Jonathan Wheaton, Animal Science

Researcher: The effects of global warming: effects of elevation of carbon dioxide and nitrogen on seedlings
Project:
Mentor: Peter Reich, Forest Resources

Researcher: Ryan Levi Syverson
Project: AFLP Diversity Study of Wild Potato *Solanum*, series Bulbocastana
Mentor: James Bradeen, Plant Pathology

Researcher: Beth Kristine Thielen
Project: Genetic basis of Alport Syndrome-diffuse leiomyomatosis
Mentor: Yoav Segal, Medicine, Renal

Project: siRNA-mediated suppression of apoptotic pathway proteins
Mentor: Tucker LeBien, Laboratory Medicine, Pathology

Researcher: Kathryn Mary Tupy
Mentor: Kathleen Conklin, Genetics, Cell Biology, & Development

Researcher: Ramon Ramirez Villanueva
Mentor: Donald Simone, Oral Sciences

Researcher: Sarah McBride Wallraff
Project: Yeast model of spinobulbar muscular atrophy
Mentor: Dennis Livingston, Biochemistry, Molecular Biology, & Biophysics

Researcher: Michelle Dawn Walz
Project: Localizing Rim 30 in *Candida albicans*
Mentor: Dana Davis, Microbiology

Researcher: Hailun Wang
Mentor: Howard Rines, Agronomy & Plant Genetics

Researcher: May-Shin Wang
Project: Quantification of nicotine metabolites from lab bioassays on gas chromatography-mass spectrometry for study of chemoprevention
Mentor: Sharon Murphy, Cancer Center

Project: Protein identification fat adipocyte versus undifferentiated preadipocyte cells using polyacrylamide gel electrophoresis
Mentor: David Bernlohr, Biochemistry, Molecular Biology, & Biophysics

Researcher: Tzu-Fei Wang
Project: The role of cyclin D2 in ventricular zone proliferation
Mentor: Elizabeth Ross, Neurology

Researcher: Michael Julius Weisbrod
Mentor: Edward Combe, Oral Sciences-Biomaterials

Researcher: Daniel Eric Westholm
Project: A $\sigma 3$ -dependent mechanism of immune response evasion in reovirus
Mentors: Leslie Schiff & Jennifer Smith, Microbiology

Project: Managing the evolution of insect resistance to transgenic crops
Mentors: Donald Alstad, Ecology, Evolution & Behavior

Researcher: Rebecca Kay Willaert
Mentor: William Oetting, Genetics, Cell Biology, & Development

Researcher: Ryan Margaret Wilson
Project: Effect of salt reduction on guanylyl cyclase-B activity
Mentor: Lincoln Potter, Biochemistry, Molecular Biology, & Biophysics

Researcher: John Chan Yick
Project: Methodology for the study of metabolism using stable isotopes and mass spectrometry
Mentor: Elizabeth Parks, Food Science & Nutrition

Researcher: Eun-Ji Yoo
Mentor: Esam El-Fakahany, Neuroscience

Researcher: Philip Ward Zimmerman
Mentor: Kathleen Conklin, Genetics, Cell Biology and Development

ACADEMIC REGALIA

Although today they are usually worn only on special occasions such as graduation, academic gowns were required dress for scholars in the Middle Ages. Not only did these special gowns indicate the academic rank of the wearer, but also helped keep the scholar warm in the drafty, unheated halls of academia! The styles you see worn in our commencement originated in English universities during the 14th and 15th centuries. The use of these gowns in the United States extends back to the colonial times and was prescribed by an Intercollegiate Code in 1895.

The markings, cut, and colors of the modern day academic gowns indicate the academic degree, the field of study, and the institution that granted the degree. In the United States, the gown for the bachelor's degree is untrimmed and has pointed sleeves. The gown for the Master's degree is also untrimmed, but it has winged sleeves. The Doctorate degree gowns are trimmed in velvet, with three velvet bars on the bell-shaped sleeves. The hoods worn by master's or doctorate degree holders are edged in velvet with the color indicating the discipline. For example, dark blue velvet edging indicates a doctor of philosophy (Ph.D.) degree. The hoods are faced with the color or colors of the institution that conferred the degree, which of course is maroon and gold for the University of Minnesota.

At the University of Minnesota commencement ceremonies – except those where master's and doctoral degrees, are awarded – mortarboard tassels indicate field of study. The College of Biological Sciences' tassel is golden yellow. Honors students wear medallions with a maroon and gold ribbon.

THE MACE

The University of Minnesota mace was carried for the first time in 1961 by Regents' Professor of Physics Alfred O.C. Nier at the inauguration of President O. Meredith Wilson. Art professor Philip Morton designed the mace: a crystal sphere four inches in diameter surmounted by the North Star, symbol of the state of Minnesota, on a solid aluminum handle set with the University regents' seal.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

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