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Commencement



2006

COLLEGE OF
Biological Sciences
UNIVERSITY OF MINNESOTA

THE COLLEGE OF BIOLOGICAL SCIENCES

The mission of the College of Biological Sciences is to advance knowledge of the mechanisms of life through breakthrough discoveries and to prepare today's students to create the biology of tomorrow.

CBS provides students with a world of opportunities—from molecules to ecosystems—to improve human health, develop renewable resources for energy and materials, enhance agriculture, and restore the environment.

The College is committed to working with colleagues within the university, and with constituents in the community, government, and industry to advance knowledge of biological sciences and to apply that knowledge to improve the quality of life for people in Minnesota, the nation, and the world.

SIGN LANGUAGE INTERPRETER

A sign language interpreter will be located on the stage.

CELL PHONES AND PAGERS

Please turn off all cell phone and pager ringers before the ceremony begins.

PHOTOGRAPHS

For your convenience, we have made arrangements with a professional photographer to take a picture of each student crossing the stage. This service will enable each student to have a photograph of this special event. Family members and friends are encouraged to remain in their seats and enjoy the ceremony. However, photographs may be taken from the orchestra pit. Please do not block the ramp or the aisles. The graduates need to proceed down the ramp and back to their seats in a timely manner. Thank you for your cooperation.

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.

PROGRAM

ACADEMIC PROCESSION

John S. Anderson, Ph.D.

Mace Bearer

Dr. Anderson, Professor of Biochemistry, Molecular Biology, and Biophysics, earned his Ph.D. from the University of Nebraska, Lincoln in 1963. After completing a postdoctoral fellowship with Nobel Prize Winner Francis Crick at Cambridge University, Dr. Anderson joined the faculty of the University of Minnesota in 1967. He is an accomplished researcher as well as an award-winning teacher. Dr. Anderson has provided leadership for CBS as the Director of the General Biology Program and Co-Director of the Life Sciences Summer Undergraduate Research Program.

WELCOME

Robert Elde, Ph.D.

Dean, College of Biological Sciences

Robert 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 in 1977 and is now the J. B. Johnston Land Grant Professor of Neuroscience in the Department of Neuroscience.

STUDENT ADDRESSES

"Heroes"

Lisa Hoang

Lisa Hoang, who is receiving a bachelor of science degree with a major in Biology, was born in Vietnam and moved here with her family when she was eight years old. The youngest of three children, she is the first member of her family to graduate from college. After graduation, she hopes to travel and then plans to work as a laboratory assistant for a pharmaceutical or food production company. She would like to return to school in the future to continue her education.

"Launching Toward New Horizons"

Amanda Hemmingsen

In addition to majoring in Genetics, Cell Biology, and Development, Amanda has been involved in many activities, including three years as an Admissions Ambassador and two years as a Community Adviser in the Health Sciences Living and Learning Community in Frontier Hall. She received the 2006 President's Student Leadership and Service Award for organizing community service events. After graduation, she plans to work in a research laboratory at the Mayo Clinic and to pursue a master's degree in genetics at Iowa State University. Her career goal is to become a forensic scientist and specialize in DNA analysis.

AWARDS FOR TEACHING EXCELLENCE

Presented by Dean Robert Elde

**Stanley Dagley-Samuel Kirkwood Undergraduate Education Award
Eric Bauer, Ph.D.**

Department of Genetics, Cell Biology, and Development

Dr. Bauer earned his Ph.D. from the University of Minnesota. He devotes his time to undergraduate and graduate education through teaching courses in anatomy and histology. His research focuses on pancreatic islet physiology and islet adhesion molecules.

Howard Hughes Medical Institute Professorship

Claudia Neuhauser, Ph.D.

Department of Ecology, Evolution, and Behavior

TEACHING ASSISTANT AWARDS

Rawan Awwad *Genetics, Cell Biology, and Development*

Ms. Awwad's students welcomed the strong rapport that she was able to build with them, her concern for them as individuals, and her enthusiasm for biology.

Harpartap Mann *Horticulture*

The students in Mr. Mann's laboratory appreciated that he challenged them to think critically about the subject matter and his ability to utilize real life examples to illustrate difficult concepts.

Katherine Phillips *Ecology, Evolution, and Behavior*

Ms. Phillips' students valued her passion for biology and ability to create a friendly and positive learning environment within the laboratory.

COMMENCEMENT ADDRESS

"Science as a Tool for Creating Our Future"

Eric Jolly, Ph.D.

President of the Science Museum of Minnesota

Dr. Jolly is nationally known for his contributions to mathematics and science education. He frequently works with such groups as the American Association for the Advancement of Science, National Action Council for Minorities in Engineering, National Council for Teachers of Mathematics, and the National Science Teachers Association. He has published numerous books, articles, and curricula and lectures throughout the world. His curricula are used in more than 16 countries. Dr. Jolly has a Ph.D in psychology from the University of Oklahoma.

PRESENTATION OF THE CANDIDATES

Huber Warner, Ph.D.

Associate Dean for Research, College of Biological Sciences

In 2005, Dr. Warner returned to the University of Minnesota after 21 years at the National Institutes of Health, where he was an Associate Director in the National Institute on Aging with responsibility for the Biology of Aging Extramural Grant Program. He had been a professor in the CBS Department of Biochemistry from 1964 to 1984. Dr. Warner obtained his Ph.D. in biochemistry from the University of Michigan in 1962.

Robin Wright, Ph.D.

Associate Dean for Faculty and Academic Affairs, College of Biological Sciences

Robin Wright received her Ph.D. from Carnegie-Mellon University in 1985. She joined the College of Biological Sciences in 2003 as Associate Dean. Dr. Wright is Professor of Genetics, Cell Biology, and Development and recognized for her research in this field. She also serves as the chair for the CBS Curriculum Task Force and is chair of the U of M Council for Enhancing Student Learning.

CONFERRAL OF THE DEGREES

Patricia Simmons, M.D.

Regent, University of Minnesota

Dr. Simmons is a physician at the Mayo Clinic and a professor in the Department of Pediatrics and Adolescent Medicine at Mayo Medical School. She has been a member of the Mayo Foundation Board of Trustees and the Mayo Clinic Board of Governors, among other leadership positions. Dr. Simmons, who received a bachelor's degree from Carleton College, *magna cum laude*, and a medical degree from the University of Chicago, completed her residency at the Mayo Graduate School of Medicine. She is actively involved in her community and is a frequent author and lecturer in her field.

CONGRATULATIONS AND WELCOME

Jeffrey Carpenter, Ph.D.

President, Biological Sciences Alumni Society

Dr. Carpenter received his bachelor's and master's degrees in forestry and ecology from the University of Montana and earned his Ph.D. in cell and developmental biology from the University of Minnesota in 1991. He spent 15 months working for Sen. Paul Wellstone on issues related to science, technology, and the environment. Subsequently, he worked for a start-up company where he helped develop and commercialize new products. In 1998, Dr. Carpenter joined the University's technology transfer office, where he continues to help faculty develop and commercialize new products.

CLOSING REMARKS

Dean Robert Elde

HAIL! MINNESOTA

Led by Dr. John S. Anderson, 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 forms 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 (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 the research experience and a two-semester honors seminar, which exposes students to the breadth of biological inquiry and promotes interactions among the honors students. 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 3.75), *magna cum laude* (at least 3.666), or *cum laude* (at least 3.50).

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.

THE MACE

The University of Minnesota mace was designed by art professor Philip Morton. It consists of a crystal sphere four inches in diameter surmounted by the North Star, symbol of the state of Minnesota, on an aluminum handle set with the University Regents seal.

The mace was first carried in 1961 by Alfred Nier, Regents Professor of Physics, at the inauguration of President O. Meredith Wilson.

DEGREE CANDIDATES

BIOCHEMISTRY

Emily-jean Aguocha
Nicholas Anderson
Shanna Anderson Hoffman
Jacob Ankeny (*summa cum laude, high distinction, **)
Brent Berry (*summa cum laude, distinction*)
Anushree Bhosale (*)
Pallavi Bhosale
Alex Burchill
Roger Chen
Adrine Chung
Daniel Cygnar
Adam DuFresne
Dana Eichholz
Ghada Elnashar
Joshua Enwright
Suzanne Geier (*summa cum laude, high distinction*)
David Hildebrandt
Danielle Hirsch
Tuere Hughes (*cum laude*)
Nandini Kataria (*summa cum laude*)
Mabina Kiawu
Brent Knudson
Edward LaBelle
Megan Landry (*summa cum laude, distinction, **)
Lynda Lat
Thinh Le
Anne Liwonjo
Michael Lofgren
Oana Lungu (*summa cum laude, distinction*)
Chang McAleese
Ryan McIntosh
Joo Hwan No
Chike Obi
Adetolu Odufuye
Emily Olson (*cum laude, **)
Vanessa Perez
Catherine Pham
Tammy Quan
Michael Raleigh (*distinction*)
Luke Robinson (*summa cum laude, high distinction, *, President's Student Leadership and Service Award*)
Colin Rock (*distinction*)
Maura Romanshek
Robyn Scherber
Erika Seberson
Eric Sharma
Jonathan Snyder (*distinction*)
Eunice Song (*cum laude*)
Vladimir Spasojevic
Darin Steenerson

Shana Theobald (*summa cum laude, distinction*)
Tiffany Trendera
Kimleng Vay
Manman Wang (*cum laude*)
Amy Warman
Adam Warner
Zabrina Warzonek (*summa cum laude, high distinction*)
Jordan Wilkins
Anna Windfeldt
Ling Xu (*summa cum laude, high distinction*)

BIOLOGY

Emily Adams
Joshua Adney
Chad Ahmed
Amber Allen
Jeremy Allred
Eric Anderson
Lee Andrzejewski
Shawna Audette
Tyler Aunan
Mariah Babcock (*)
Benjamin Backus
Jeremy Banks
Jacob Barthold
Shawna Bentler
Christie Berkseth (*summa cum laude, **)
Valentina Bernal Fajardo
John Bezdek (*distinction*)
Megan Bina
James Bischoff
Michael Boesche
Rachel Brietkrietz
Jessica Brigley
Leah Brus
Trista Campbell
Allison Carland (*distinction*)
Olivia Carlson
Delina Carpenter
Debra Carreon
John Cartlidge
Alida Casey
Michelle Chan
Sarah Clarys
Jessica Clausen
Amy Cokley
Stacy Compton
Benjamin Davies
Robin Davis
Ellen Denzen
Andrea Devine
Sara Dickson
Jesse Donner
Bethany Doran (*distinction*)
Kelly Dorek

BIOLOGY *(continued)*

Catherine Doyle
Victor Duong
Jennifer Dylla
Kari Eason
Matthew Eggenberger
Lana Elpert
Adam Engelhardt (*high distinction, **)
Heather Erb
Daniel Falvey
Michael Farell
Sara Fenske
Russell Flewellen III
Hannah Follis
Erika Fuchs
Michael Garlich (*distinction*)
Zoya Gesina (*)
Matthew Goeltl
Michael Grace
John Hammill
Adrienne Harden
Nathan Harris
Amanda Hawes
Bradley Heideman
Kyle Heller
Julia Herman (*)
Nathaniel Herried
Jonathan Herseth (*distinction*)
Lisa Hoang
Danielle Holman (*distinction*)
Anthony Hooten
Elizabeth Horsager
Alice Huang
Mariam Hussein
Jihan Jacobs (*magna cum laude*)
Karl Jacobson
Michael Jensen
Derek Johnson
Ilene Jones
Mackenzie Jones (*summa cum laude, **)
Amanda Kamla
Brittany Kaufman
Jordan Keen
Sheridan Kelley (*summa cum laude, high distinction*)
Kevin Keopraseuth
Hamid Khanjari
Terry King
Joshua Klitzke
Ann Konrardy
Emily Kopfmann
Mark Krampf
Nicole Krueger
Timothy Kuhnmuench
Kristin LaDoucer
Nathan Lam
Cecile Lamour
Joshua Laughlin
Zachary Lechner
Chang Lee
Young-Ae Lee

Matthew Lobeck
Malissa Locke
Melissa Loren
Karen Lucas
Chad Lunas
Linah Mairura (*summa cum laude, distinction*)
Avinash Mantha
Gloria Marihart
Joseph Matak
Michael Merth
Shanna Miller
Eric Mitchell
Tiffany Mlodzik
Marzi Moezodin
Abdulahi Mohamed
Jennifer Moy
Tyler Nelson
Hanna Nguyen
Jennifer Norton
Melissa Oeding (*high distinction*)
Esther Okoampa
Ngozika Okoye
Amanda Olson
Michael Olson
Gad Onyeneho
Angela Paulsen
Tyler Pavlowich
Jacob Pederson
John Pelzel
Jake Pemberton
Ellen Petermeier (*distinction*)
Megan Peters (*distinction*)
Kathryn Peterson
Jacqueline Pflugi
Drew Pippin
Kevin Pitel
Arik Polglaze
Meredith Prochnow
Beau Pulvermacher
Ellen Rashke
Stacey Rewitzer
Anna Rezekulova
Michaela Richardson (*distinction*)
Caitlin Rooney
Maria Ruiz
Ryan Russ
Peter Saad
Matthew Sabbe
Thomas Salmi
Jeyaledchumy Satheesh
Jill Sauber
Melissa Schager
Lindsay Schlichting
Jacqueline Schmaidinda
Brenda Schmidt
Latoya Schmidt
Maria Schuweiler
Lauren Seering
Krista Sikorski
Gina Smith

BIOLOGY (continued)

Jaime J. Smith
 Jamie L. Smith
 Megan Soderstrom
 Goodwin Sonstegard
 Karla Sorensen (*distinction, **)
 Jill St Aubin
 Christopher Steevens
 James Swendsen
 Jesse Swenson
 Christopher Taylor
 Olivia Thai
 Melanie Thurstin
 Lisa Tieu
 Ashenafi Tilahun
 Julia Tkachenko
 Erik Tofteland
 Frida Tosi
 Elliott Tyler
 Lao Vang
 Nancy Vang
 Peter Vang
 Jessica Vaughn
 Nicole Wagner (*distinction*)
 Tiara Wagner
 Robert Waltonen
 John Warden
 Dana Wegener
 Emily Welle (*summa cum laude, high distinction*)
 Jacquelyn Wentworth
 Jessica Wilke
 Heather Wilson
 Nathaniel Wilson-Grady
 Rene Wolfe
 Erin Wray
 Molly Yang (*summa cum laude, distinction, **)
 Hayeon Yoon
 Eric Zard

ECOLOGY, EVOLUTION, AND**BEHAVIOR**

Chad Burgess
 Rhonwen Chester-Jones
 Thea Fleming
 Marta Halina (*summa cum laude, distinction, **)
 Angela Hanson
 Sarah Knutie
 Matthew Kuehl
 Jacob Lindeman
 Rebecca Malkovich
 Timothy Oujiri
 Erina Sato
 Adam Schumacher
 Christopher Souther
 Allison Willett
 Charles Willis

GENETICS, CELL BIOLOGY, AND DEVELOPMENT

Ashley Aaron (*magna cum laude, **)
 Kirsten Abramczyk
 Kylie Adams
 Fatima Akyol
 Kassa Andreasen
 Ernesto Arita
 Nicholas Austin (*high distinction*)
 Christina Betterley
 Sarah Bradley (*summa cum laude, distinction*)
 Romina Caretta
 Kelley Carlson
 Thomas Cheever (*summa cum laude, distinction*)
 Elizabeth Chrans
 Heather Cohen
 Matthew D'Costa
 Molly Derry
 Dina Dobraca (*summa cum laude, **)
 Krista Drew
 Jennifer Ellingson
 Ronda Farah (*summa cum laude, distinction*)
 Michael Ferguson
 Mami Fujisaki
 Jennifer Gawthrop
 Rebecca Gerlach
 Brian Gibbens (*distinction*)
 Jonathan Glynn
 Saik Kia Goh
 Joseph Goodman
 Julie Green (*cum laude*)
 Julianna Hagenbrock
 Christopher Haug
 Jimmy Haung (*cum laude*)
 Jonica Hazaert
 Amanda Hemmingsen (*President's Student Leadership and Service Award*)
 Mary Hendrickson
 Andrea Henning
 Kelly Hiatt
 Heather Horton (*cum laude, **)
 Pi-i Hsu
 Kari Janssen
 Meghan Johnson
 Chelsy Jungbluth
 Sharolyn Kawakami (*summa cum laude, distinction, **)
 Sheridan Kelley (*summa cum laude, high distinction*)
 Jeremy Kobany
 Stacy Krueth (*summa cum laude, high distinction, **)
 Resmy Kurian
 Nathan Lam
 Quyen Lam
 Paul Lanners

**GENETICS, CELL BIOLOGY, AND
DEVELOPMENT** (*continued*)

Tonya Laufenberg
Daniel Lercher (*summa cum laude*)
Erin Martin
Sarah Mattson
Matthew McCarra
Rita-Marie McFadden
Sarah Merkel
Christopher Mitchum
Jaclyn Morin
Stephanie Moy
Sureni Mullegama
Claire Mulligan
Jennifer Nei
Eric Nelson
John Nerva (*summa cum laude, high
distinction, **)
Alexandra Nguyen
Mark Nicholson
Jessica Novak
Laura Okagaki
Jeremy Olson
Grant Overcott
Matthew Painschab (*summa cum
laude, high distinction, **)
Sivani Paskaradevan
Khushboo Patel
Lehan Patrick
Katherine Paulus
Alissa Pelzer
Jacqueline Pflug
Kathleen Pierson
Sarah Polcher
Hoda Pourhassan
Leah Randles (*magna cum laude,
distinction*)
Krsna Rangarajan (*cum laude*)
Sindhuja Rao (*summa cum laude*)
Rebecca Schmitz
Christine Sieben
Gregory Snyder
Kimberly Stelzig
Kenichiro Taniguchi
Alycia Trossen
Jose Velasquez
Bryan Votel
Courtney White
Shelby Williams
Joseph Wilson
Jacqueline Wozniak
Andrea Zurek

MICROBIOLOGY

Amanda Bartz
Bjorn Batdorf (*summa cum laude,
distinction*)
Kyle Cady
Vutha Dao

Eric Eigenberg
Kristin Freiberg
Ryan Gierke
Thomas Groves
Erin Hawkinson
Catie Hill (*magna cum laude*)
Janna Hill
Ingrid Huntley
Tran Huynh
Nathan Johnson
Timothy Kao
Erin Ladwig
Katriya Meyer
Stephanie Newcomb
Sylvanus Owusu
Paula Schumann (*President's Student
Leadership and Service Award*)
Toni Schwarz
Colin Schwensohn
Ummer Siddique
Adam Stanenas
Marisa Stanley
Jillian Vocke
Ann Yang

NEUROSCIENCE

Maralyssa Bann (*summa cum laude,
distinction, **)
David Bearl
Nielsen Burns
Josef Czerniecki
Blake Daley
Justin Deans
Jonathan Ehrich (*distinction*)
Adrienne Escher
Nathan Gallus (*)
Stephanie Hacker
Paula Haynes
Kimberly Krawczewski
Bonnie Lacroix
Meghan Masrud
Samuel Meidinger
Michael Oien
Twinkle Pandian (*)
Shivang Patel
Keriann Perna
Sarah Rustad
Megan Schmidt
Elizabeth Slagle (*summa cum laude,
distinction, *, President's Student
Leadership and Service Award*)
Dustin Sperr (*)
Neha Tyagi
Michael Wedel

PLANT BIOLOGY

Timothy Bartleson
Lisa Dietrich
Jennifer Flynn

MULTIPLE MAJORS

Thomas Brown – Biochemistry; Microbiology

Clinton Chalker – Genetics, Cell Biology, and Development; Microbiology

Shireen de Sam Lazaro – Genetics, Cell Biology, and Development; Microbiology
(*summa cum laude, **)

Junaid Ghouse – Genetics, Cell Biology, and Development; Neuroscience

Susan Godbout – Genetics, Cell Biology, and Development; Microbiology (*cum laude, **)

Phillip Gross – Biochemistry; Genetics, Cell Biology, and Development

Laura Howard – Genetics, Cell Biology, and Development; Microbiology

Eric Huynh – Genetics, Cell Biology, and Development; Microbiology

Paul Johnson – Genetics, Cell Biology, and Development; Neuroscience

Angela Luong – Biochemistry; Genetics, Cell Biology, and Development

Daniel Mark – Genetics, Cell Biology, and Development; Neuroscience

Christna Ouch – Genetics, Cell Biology, and Development; Microbiology (*high distinction*)

Susan Rathe – Biochemistry; Genetics, Cell Biology, and Development (*magna cum laude, distinction*)

Jeanna Reinardy – Biochemistry; Genetics, Cell Biology, and Development

Ali Schneider – Genetics, Cell Biology, and Development; Microbiology

Wade Schulz – Genetics, Cell Biology, and Development; Microbiology (*cum laude, **)

Chelsea Tieszen – Biochemistry; Genetics, Cell Biology, and Development (*summa cum laude, distinction*)

Ilya Tikh – Biochemistry; Microbiology

Katherine Volzing – Biochemistry; Genetics, Cell Biology, and Development
(*summa cum laude, distinction*)

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 are encouraged to work with faculty to make discoveries of their own. We recognize our students and their mentors who have embraced this opportunity and advanced the boundaries of human understanding.

Ashley Aaron completed a directed research project titled "The RAD50 protein in the RMN complex, double strand break repair, and cell survival" with faculty mentor Dr. Colin Campbell.

Joshua Adney completed a directed research project titled "The Role of MAPC's in Ischemia and Lymphedema" with faculty mentor Dr. Catherine Verfaillie.

Emily-jean Agucha completed a directed research project titled "Structure - Activity Relationships of Peptidomimetics that Neutralize Bacterial Lipopolysaccharides Endotoxin" with faculty mentor Dr. Kevin Mayo.

Fatima Akyol completed a directed research project titled "Cellular Mechanism of Airway Diseases" with faculty mentor Dr. Mathur S. Kannan.

Nicholas Anderson completed a directed research project titled "Regulation of Natriuretic Peptide Receptors in Congestive Heart Failure" with faculty mentor Dr. Lincoln Potter.

Jacob Ankeny completed a directed research project titled "Glucose Regulation of Gene Transcription in Myoblasts and Hepatocytes" with faculty mentor Dr. Howard C. Towle.

Tyler Aunan completed directed research projects titled "Evaluation of Different Cell Lysis Methods with *Escherichia coli*" and "The Role of Metallothionein-III in Normal and Alzheimer's Diseased Brain Tissue" with faculty mentor Dr. Ian M. Armitage.

Nicholas Austin completed a directed research project titled "Modulation of Neuromuscular Junctions by Age and Muscle Paralysis" with faculty mentor Dr. Linda McLoon.

Ian Babson completed a directed research project titled "Rapid screening of metal reducing phenotypes in *Geobacter* species" with faculty mentor Dr. Daniel Bond.

Maralyssa Bann completed directed research projects titled "Regulation of Muscle LIM Protein in Human Heart Failure" with faculty mentor Dr. Jennifer Hall; and "Investigating the Role of Statin Drugs in Neuroprotection" with faculty mentor Dr. Gibson Wood.

David Bearl completed a directed research project titled "Attentional modulation in area MT" with faculty mentor Dr. Geoff Ghose.

Christie Berkseth completed directed research projects titled "Ultrasonographic Changes in the Peripartum Mare" with faculty mentor Dr. Erin Malone; and "Oral Health Care in Senegal".

Sarah Bradley completed a directed research project titled "Overexpression screen for novel players in the TOR signaling pathway" with faculty mentor Dr. Tom Neufeld.

Nielsen Burns completed directed research projects titled "Phylogenetic Relationships of North American Minnow Genera *Notropis* and *Percobromus*" and "Phylogenetic Relationships of North American Minnow Genera *Phenacobius* and *Erimystax*" with faculty mentor Dr. Andrew Simons.

Kyle Cady completed a directed research project titled "Osmotolerance in the metal reducing bacteria *G. sulfurreducens* and *G. metallireducens*" with faculty mentor Dr. Daniel Bond.

Alida Casey completed a directed research project titled "Bacteria Growth in Minnesota Lakes" with faculty mentor Dr. Jim Cotner.

Elizabeth Chrans completed a directed research project titled "Identification of Wilm~Rs Tumor 1-Derived CD4 T Cell Epitopes for Immunotherapy of Cancer" with faculty mentor Dr. Xianzheng Zhou.

Thomas Cheever completed a directed research project titled "A Molecular and Genetic Characterization of *lad-2*" with faculty mentor Dr. Lihsia Chen.

Elizabeth Chrans completed a directed research project titled "Identification of Wilm ~Rs Tumor 1-Derived CD4 T Cell Epitopes for Immunotherapy of Cancer" with faculty mentor Dr. Xianzheng Zhou.

Heather Cohen completed a directed research project titled "An Investigation of an Alternative Effect of an Arabidopsis Signaling Regulator CO11 in Response to Pathogens" with faculty mentor Dr. Fumiaki Katagiri.

Stacy Compton completed a directed research project titled "Development toward a cancer vaccine" with faculty mentor Dr. W. Robert Fleischmann.

Daniel Cygnar completed a directed research project titled "Cellular Mechanisms of Vocal Learning: Developmental modulation of excitability in the song nucleus HVC" with faculty mentor Dr. Teresa Nick.

Blake Daley completed directed research projects titled "Neural Stem Cell Treatment following Cardiac Ischemia" and "Cardiac Regeneration using Cord Blood Stem Cells" with faculty mentor Dr. Walter Low.

Benjamin Davies completed a directed research project titled "Growth Inhibition of Brain Cancer by IGFBP-1" with faculty mentor Dr. Bradley S. Miller.

Shireen de Sam Lazaro completed directed research projects titled "Defining the Differences Between Diabetic and Non-Diabetic Failing Hearts in Metabolic Gene Expression in Patients with LVADs" with faculty mentor Dr. Jennifer Hall; and "Interleukin-8 Induction in Group A Streptococcus" with faculty mentor Dr. Pat Cleary.

Molly Derry completed a directed research project titled "Anthocyanin1 Expression Under the Control of CoYMV Promoter in Transgenic Petunias" with faculty mentor Dr. Neil Olszewski.

Andrea Devine completed a directed research project titled "Role of Ena/Vasp proteins in somite formation" with faculty mentor Dr. Jeffrey R. Miller.

Dina Dobraca completed directed research projects titled "Genetic Screen for Secretion Mutants in *Chlamydomonas*" with faculty mentor Dr. Anton Sanderfoot; and "Quantity-activity Relationship of Denitrifying Bacteria and Environmental Scaling in Streams of a Forested Catchment" with faculty mentor Dr. Miki Hondzo.

Adam DuFresne completed a directed research project titled "Protein Apo-B (21-637)" with faculty mentor Dr. Wasantha Ranatunga.

Kari Eason completed a directed research project titled "Assessment of Mutated Glycosylation Sites on Protein Kinase CK2 and Nuclear Shuttling" with faculty mentor Dr. Khalil Ahmed.

Jennifer Ellingson completed a directed research project titled "Biochemical analysis of transport activity in Arabidopsis antiporter mutants" with faculty mentor Dr. John Ward.

Ghada Elnashar completed a directed research project titled "Development of a new vector for assaying gene regulation" with faculty mentor Dr. Michel Sanders.

Lana Elpert completed a directed research project titled "Fanconi Anemia" with faculty mentor Dr. Colin Campbell.

Ronda Farah completed a directed research project titled "The Dynamic Brain Processes Involved in the Solution of Mazes: an MEG Study" with faculty mentor Dr. Apostolos P. Georgopoulos.

Kristin Freiberg completed a directed research project titled "The phenotypic analysis of a *Candida albicans* *gad1* knockout mutation exposed to acidic pH and oxidative stress." with faculty mentor Dr. Dana Davis.

Nathan Gallus completed a directed research project titled "Effects of the NMDA Antagonist Memantine on Acute Opiate Dependence" with faculty mentor Dr. Jonathan Gewirtz.

Jennifer Gawthrop completed a directed research project titled "Nutritional Requirements for Mosquito Culture Cell" with faculty mentor Dr. Ann Fallon.

Junaid Ghouse completed a directed research project titled "Purification and Analysis of LRG-1 Protein" with faculty mentor Dr. Ronald Jemerson.

Ryan Gierke completed a directed research project titled "Development of lymphatics in the thymus" with faculty mentor Dr. Kris Hogquist.

Michael Grace completed a directed research project titled "Identifying Genetic Markers of Spontaneous Cardiomyopathy" with faculty mentor Dr. Kent Reed.

Julie Green completed a directed research project titled "Screen for Components of Topoisomerase II-Dependent Checkpoint" with faculty mentor Dr. Duncan Clarke.

Phillip Gross completed a directed research project titled "Identification and Characterization of DNA Ligase I (CDC9) Mutations in Yeast" with faculty mentor Dr. Dennis Livingston.

Thomas Groves completed a directed research project titled "Genetic screens for mutations affecting the function of the *E. faecalis* protein Prg Y" with faculty mentor Dr. Gary Dunny.

Julianna Hagenbrock completed directed research projects titled "Isolation and characterization of a stem cell population in adult mouse compact bone" with faculty mentor Dr. Paul Simmons - Peter MacCallum Cancer Institute - Melbourne, Australia; and "The *in vivo* and *in vitro* potential of Multipotent Adult Progenitor Cells" with faculty mentor Dr. Catherine Verfaillie - Stem Cell Institute - U of MN.

Jimmy Haug completed directed research projects titled "Morphological Characterization of the Cerebellum in SCA-1 Transgenic Mice" and "Pathological Characterization of Human Hereditary Ataxia" with faculty mentor Dr. Brent Clark.

Erin Hawkinson completed a directed research project titled "Cholera toxin induced gene expression in the epithelial tissues of swine" with faculty mentor Dr. David R. Brown.

Amanda Hemmingsen completed a directed research project titled "Role of dia2 in Chromosome Segregation" with faculty mentor Dr. Deanna Koepp.

Andrea Henning completed a directed research project titled "Behavioral Analysis of Kv4.2 Knockout Mice" with faculty mentor Dr. LiLian Yuan.

David Hildebrandt completed directed research projects titled "Mechanical studies of familial hypertrophic cardiomyopathy mutations the light chain of myosin" and "Resolving light chain myosin proteins using urea gel electrophoresis" with faculty mentor Dr. Osha Roopnarine.

Catie Hill completed a directed research project titled "RIM 101 dependence on vacuolar function in *Candida albicans*" with faculty mentor Dr. Dana Davis.

Janna Hill completed a directed research project titled "Diagnosing prion diseases using cDNA microarray assays" with faculty mentor Dr. Pam Skinner.

Lisa Hoang completed a directed research project titled "Accurate Quantitation of Plant Resistance Gene Transcripts" with faculty mentor Dr. Fumiaki Katagiri.

Anthony Hooten completed a directed research project titled "Humanization of Immunotoxin DT2219ARL at Amino Acid 107 on the CD19 Light Chain" with faculty mentor Dr. Daniel Vallera.

Heather Horton completed a directed research project titled "Analysis of CC Chemokine Receptor 5 and Angiotensin Converting Enzyme gene polymorphisms in relation to renal transplant success" with faculty mentor Dr. William Oetting.

Jihan Jacobs completed directed research projects titled "The effects of opioid agonists on recovery of swine skeletal muscle from an acute hypoxic event" and "Comparative Hind Limb Force Assessment of Injured and Genetically Dystrophic Mice" with faculty mentor Dr. Paul Iuzzo.

Meghan Johnson completed a directed research project titled "Sucrose transporters in ShSUT1" with faculty mentor Dr. John Ward.

Paul Johnson completed directed research projects titled "Effects of L-CysG on age related hearing loss" with faculty mentor Dr. Steven Juhn; "Differential analysis of mitochondrial response to calcium in mouse neurons" and "Differential analysis of iron-handling proteins in striatum and cortex" with faculty mentor Dr. Janet Dubinsky.

Mackenzie Jones completed a directed research project titled "Validation of the Minnesota Easy Culture System II: Results from In-lab Tri-plate Culture versus Standard Laboratory Culture, and Tri-plate Inter-reader Agreement" with faculty mentor Dr. Sandra Godden, Veterinary Population Medicine.

Nandini Kataria completed a directed research project titled "Coordinated Acquisition of Inhibitory and Activating Receptors and Functional Properties by Developing Natural Killer Cells" with faculty mentor Dr. Michael Verneris.

Sharolyn Kawakami completed directed research projects titled "Population-level interactions of the *Ustilago maydis*-*Zea mays* host-pathogen system" with faculty mentor Dr. Georgiana May; and "Mathematical modeling of freshwater plankton systems" with faculty mentor Dr. Claudia Neuhauser.

Sheridan Kelley completed a directed research project titled "The Role of DNA Ligase III in Fas-induced Apoptosis" with faculty mentor Dr. Colin Campbell.

Mabina Kiawu completed directed research projects titled "Protein Purification" and "mTOR-regulated GLUT4 Translocation Using Confocal Microscope" with faculty mentor Dr. Do-Hyung Kim.

Ann Konrardy completed a directed research project titled "The Eastern European Growth Project" with faculty mentor Dr. Maria Kroupina.

Kimberly Krawczewski completed directed research projects titled "Weight Perception in Parkinson's Disease" and "Passive Motion Sense in Parkinson's Disease" with faculty mentor Dr. Juergen Konczak.

Stacy Krueth completed a directed research project titled "The Renin/Angiotensin System in Adipose Tissue" with faculty mentor Dr. Stephen Katz.

Matthew Kuehl completed directed research projects titled "Trophic morphology of *Nocomis*" with faculty mentor Dr. Andrew Simons; and "Reductio ad Absurdum Argument" with faculty mentor Dr. Angelo Volpe.

Resmy Kurian completed a directed research project titled "Identify mutants from *Arabidopsis thaliana* which have altered responses to gibberellins" with faculty mentor Dr. Neil Olszewski.

Edward LaBelle completed a directed research project titled "Synthesis of Indole Dimer Derivatives" with faculty mentor Dr. Wayland E. Noland.

Bonnie LaCroix completed a directed research project titled "Correlation of acute opiate induced plasticity in positive and negative feedback models of drug addiction" with faculty mentor Dr. Mark Thomas.

Megan Landry completed a directed research project titled "Characterization of zinc finger domains in ZEB-1 and their role in ZEB function" with faculty mentor Dr. Michel Sanders.

Thin Le completed directed research projects titled "Characterization of the specificity of PrgX for cCF10 and related peptides" and "Examination of the PrgX dimerization state in the presence of the mutant peptides" with faculty mentor Dr. Dunny.

Zachary Lechner completed directed research projects titled "Morphometric variation in the Least Madtom (*Noturus hildebrandi*)" and "Phylogenetic relationships of madtom catfishes (Ictaluridae: *Noturus*) using ND4/ND5 mitochondrial genes" with faculty mentor Dr. Andrew Simons.

Chang Lee completed directed research projects titled "Effect on survival of *E. coli* in different temperature" and "Detection of pathogenic microorganisms" with faculty mentor Dr. Mike Sadowsky.

Daniel Lercher completed a directed research project titled "The Role of Dally Core Protein in *Drosophila* Development" with faculty mentor Dr. Scott Selleck.

Linah Mairura completed a directed research project titled "Biogeography of *Ustilago maydis* virus" with faculty mentor Dr. Georgiana May.

Rebecca Malkovich completed a directed research project titled "Emergence success of butterflies from butterfly farmers supplying the Minnesota Zoo" with faculty mentor Dr. Kathryn Hanna.

Avinash Mantha completed a directed research project titled "P21 levels and cell cycle progression" with faculty mentor Dr. Robert Sheaff.

Daniel Mark completed a directed research project titled "Coordination Deficits in Spinocerebellar Ataxia" with faculty mentor Dr. John H. Anderson.

Gloria Marihart completed directed research projects titled "Taste Aversion in *Passer Domesticus* (Methyl Anthranilate)" and "Feeding Behavior of *Passer Domesticus*" with faculty mentor Dr. Kitts; and "International Campus Earth Summit Attendee, Yale University".

Matthew McCarra completed directed research projects titled "Impact of the V271 polymorphism" with faculty mentor Dr. Lisa Schimmenti; and "Disease causing PTPN11 mutations have gain-of-function effects during frog embryogenesis" with faculty mentor Dr. Jamie Lohr.

Katriya Meyer completed directed research projects titled "Characterization of *Escherichia coli* from different animal hosts based on pathogenicity" and "Phylogenetic groupings of commensal *Escherichia coli* strains" with faculty mentor Dr. Michael Sadowsky.

Shanna Miller completed a directed research project titled "Embryonic Stem Cells Contribute to Mouse Chimeras Independent of Cell Fusion Mechanisms" with faculty mentor Dr. Catherine Verfaillie.

Marzi Moezodin completed a directed research project titled "Osteopontin is a Regulator of Bone Mineralization" with faculty mentor Dr. Raj Gopalakrishnan.

Jaclyn Morin completed a directed research project titled "PAX2 mutations associated with renal coloboma syndrome" with faculty mentor Dr. Lisa Schimmenti.

Claire Mulligan completed a directed research project titled "Cancer Research Study" with faculty mentor Dr. Daniel Vallera.

John Nerva completed a directed research project titled "Investigation of Translation Complex eIF4F in IPF Fibroblasts" with faculty mentor Dr. Peter Bitterman.

Joo Hwan No completed a directed research project titled "Direct Effect of Curcumin on Matrixmetallo-Protease" with faculty mentor Dr. Pei.

Ester Okoampa completed a directed research project titled "Analysis of fMRI variability and repeatability" with faculty mentor Dr. Teresa Jacobson-Kimberley.

Ngozika Okoye completed a directed research project titled "MAP Kinase Phosphatase-3 Regulation in Colorectal Carcinoma" with faculty mentor Dr. Laura Mauro.

Christna Ouch completed a directed research project titled "Determining the ability of hepatic Organic Acid Transporter 2 in transporting common anion substrates using competition and viability assays" with faculty mentor Dr. Victoria Iwanij.

Matthew Painschab completed a directed research project titled "Genetic Manipulation of Human Embryonic Stem Cells" with faculty mentor Dr. Dan Kaufman.

Twinkle Pandian completed a directed research project titled "Molecular causes of schizophrenia and autism" with faculty mentor Dr. S. H. Fatemi.

Sivani Paskaradevan completed directed research projects titled "Genetic Analysis of the SYP7 Gene Family in Arabidopsis" with faculty mentor Dr. Anton Sanderfoot; and "The effect of a chronic inflammatory milieu on the epigenetic modification of the IL-8 gene" with faculty mentor Dr. Joseph De Larco.

Khushboo Patel completed a directed research project titled "Determination of proteins in susceptibility regulation" with faculty mentor Dr. Tam.

Angela Paulsen completed a directed research project titled "Research on a Protein Implicated in the Etiology of Alzheimer's Disease" with faculty mentor Dr. Ian Armitage.

Alissa Pelzer completed directed research projects titled "Expression of IGF1R and IR in Breast Cancer" and "Development of *in vivo* imaging to monitor breast cancer metastasis regulated by IGF1R" with faculty mentor Dr. Douglas Yee.

Kevin Pitel completed a directed research project titled "Identification of SNPs and CAPs in inbred strands of Maize, with focus on genes *Mez1*, *Mez3*, and *Vef101*" with faculty mentor Dr. Nathan Springer.

Michael Raleigh completed a directed research project titled "Expression of ZEB-1 and ZEB-2 in Reproductive Carcinoma Cell Lines" with faculty mentor Dr. Michel Sanders.

Sindhuja Rao completed a directed research project titled "Interferon Regulatory Factor 2 and Systemic Lupus Erythematosus" with faculty mentor Dr. Kathy Moser.

Ellen Rashke completed a directed research project titled "Causes of Shallow Lake Stable States" with faculty mentor Dr. James Cotner.

Stacey Rewitzer completed a directed research project titled "Identification of signaling pathways necessary for IFN- β induction against the human cytomegalovirus" with faculty mentor Dr. Wade Bresnahan.

Anna Rezekulova completed a directed research project titled "Morphologies of Suprachoroidal Space" with faculty mentor Dr. Olsen.

Luke Robinson completed a directed research project titled "The Role of ChREBP in Glucose-Regulated Gene Expression" with faculty mentor Dr. Howard Towle.

Maura Romanshek completed a directed research project titled "Structural Analysis of Fatty Acid Binding Protein" with faculty mentor Dr. David Bernlohr.

Erina Sato completed a directed research project titled "Nuclear gene analysis of species limits in the Eurasian Nuthatch, *Sitta europaea*" with faculty mentor Dr. Robert Zink.

Megan Schmidt completed a directed research project titled "Directed Studies - Neuroscience Needs Survey" with faculty mentor Dr. Janet Dubinsky.

Adam Schumacher completed directed research projects titled "The Ecological Stoichiometry of *Brachycentrus* in Minnesota Stream Waters" with faculty mentor Dr. Jacques Finlay; and "Decomposing decomposition: The role microbial communities play in regulating decomposition response to N amendment" with faculty mentor Dr. Sarah Hobbie.

Paula Schumann completed a directed research project titled "Elemental composition of aquatic heterotrophic bacteria" with faculty mentor Dr. James Cotner.

Colin Schwensohn completed a directed research project titled "PFGE Fingerprinting of *E. coli* Isolates Obtained From Fresh Produce Collected From Farms in Minnesota and Wisconsin" with faculty mentor Dr. Francisco Diez-Gonzalez.

Eric Sharma completed a directed research project titled "Research in the effects of chemokines in tumors." with faculty mentor Dr. Donald Simone.

Krista Sikorski completed a directed research project titled "Affects of Xanomeline on Neuronal Receptors" with faculty mentor Dr. Esam El-Fakahany.

Elizabeth Slagle completed a directed research project titled "fMRI Study of Mental Rotation" with faculty mentor Dr. Apostolos P. Georgopoulos.

Gina Smith completed a directed research project titled "Tumor Evoked Cancer Pain and Antihyperalgesic Effects of Cannabinoids" with faculty mentor Dr. Darryl Hamamoto.

Jaime Smith completed a directed research project titled "Histological Analysis of Coronary Veins" with faculty mentor Dr. Paul Iuzzo.

Megan Soderstrom completed a directed research project titled "Study of Ubiquitin Ligases in the Mammalian Cell Cycle" with faculty mentor Dr. Deanna Koeppe.

Eunice Song completed a directed research project titled "Phosphorylation Induced Changes Between the Two Heads of Smooth Muscle Myosin" with faculty mentor Dr. Dave Thomas.

Dustin Sperr completed a directed research project titled "The Effect of Hypoglycemia on Heme Oxygenase-1 Protein Expression in the Developing Rat Brain" with faculty mentor Dr. Raghu Rao.

Marisa Stanley completed a directed research project titled "Detection and Characterization of Shiga Toxigenic *E. coli* isolated from Duluth Boat Club Beach" with faculty mentor Dr. Michael J. Sadowsky.

Darin Steenerson completed a directed research project titled "Synthesis of 4,5 Dibromophthalic Anhydride" with faculty mentor Dr. Wayland Noland.

Ashenafi Tilahun completed a directed research project titled "Identification of *Arabidopsis thaliana* mutants with defects in defense against the bacterial pathogen *Pseudomonas syringe*" with faculty mentor Dr. Raka Mitra.

Tiffany Trenda completed a directed research project titled "Site-directed mutagenesis of 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase to generate an enzyme that is bisphosphatase-inactive and has regulatable kinase activity" with faculty mentor Dr. Alex Lange.

Alycia Trossen completed a directed research project titled "Methyl transferase activity in PFBE(Z) mutants" with faculty mentor Dr. Jeff Simon.

Katherine Volzing completed directed research projects titled "Pertussis Toxin Epitope Mapping" with faculty mentor Dr. Jennifer Maynard; and "TGFB1i1 regulation by TGFB" with faculty mentor Dr. Paul Marker.

Manman Rachel Wang completed a directed research project titled "Identifying Suppressors and Enhancers for Cold Adaptation in Yeast" with faculty mentor Dr. Robin Wright.

Zabrina Warzonek completed a directed research project titled "The Role of the Ena/VASP family of Actin Regulatory Proteins in Myoblast Differentiation" with faculty mentor Dr. Jeffrey R. Miller.

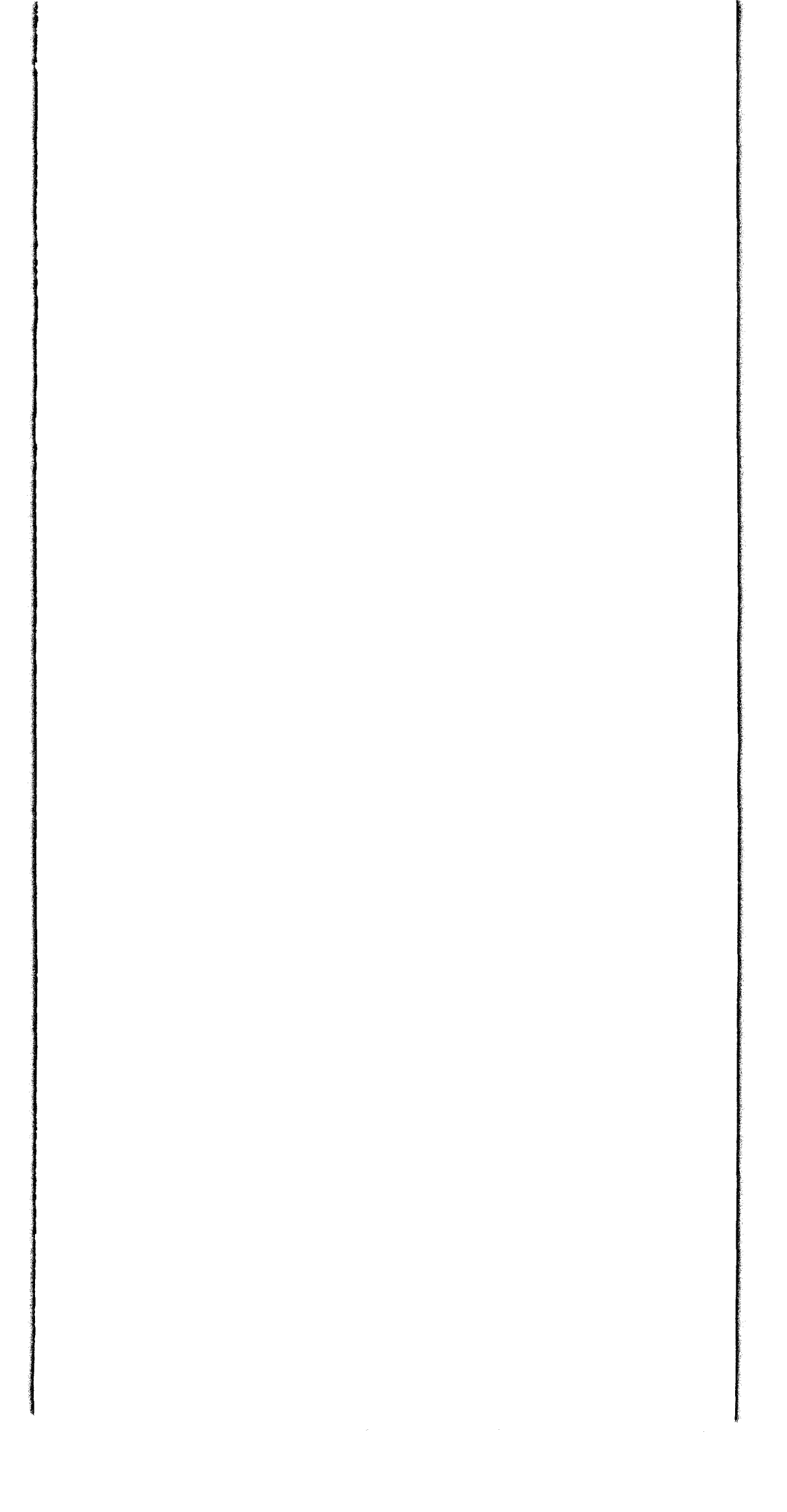
Emily Welle completed a directed research project titled "Adolescent Depression in the HCMC ED" with faculty mentor Dr. Michelle Biros.

Jordan Wilkins completed a directed research project titled "Association of genetic variation with risk for myeloma" with faculty mentor Dr. Brian Van Ness.

Allison Willett completed directed research projects titled "Competitive effects of grasses on *Arabidopsis* from differing CO₂ regimes: a pilot study" with faculty mentor Dr. Ruth Shaw; and "Behavioral measures of negative emotionality following opiate withdrawal" with faculty mentor Dr. Jonathan Gewirtz.

Ling Xu completed a directed research project titled "Structural Characterization of DNA Adducts due to Tetrachloro-1,4-benzoquinone" with faculty mentor Dr. Shana Sturla.

Molly Yang completed directed research projects titled "The Sfil Orientation of Chromosomes 1 and 4 in *Candida albicans*" and "The Viability of *Candida albicans* Diploids vs. Tetraploids in Stationary Phase" with faculty mentor Dr. Pete Magee.



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This publication/material can be made available in alternative formats for people with disabilities. Direct requests to Peggy Rinard, 612-624-0774.