

COLLEGE OF BIOLOGICAL SCIENCES

2017 ANNUAL REPORT

TABLE OF CONTENTS

P.3 HIGHLIGHTS FROM 2017

P.4 COLLEGE SNAPSHOT

P.4 STUDENTS

P.7 FACULTY AND RESEARCH

P.9 PUBLIC ENGAGEMENT

P.10 ADVANCEMENT

P.11 FINANCIALS

P.12 IN DETAIL

2017 HIGHLIGHTS

At the College of Biological Sciences, 2017 was a year marked by growing undergraduate enrollment, the launch of an ambitious fundraising campaign, increased student support and greater engagement with alumni and the public. Here are some of the highlights:

High demand, growing enrollment

The College continues to grow in line with a goal of enrolling a freshman class of 700 students a year by 2020. We had about 7,600 applicants for approximately 600 spots for fall 2017. Undergraduate enrollment nearly doubled in the past decade from 337 freshmen enrolled in 2007 to almost 600 in 2017.

More financial support for students

The College committed to \$1 million in scholarships and fellowships to incoming and continuing undergraduate and graduate students including 140 scholarships and 35 fellowships. The College substantially increased the number of four-year scholarships offered from zero in 2015 to 49 in 2017.

Making the move to active-learning labs

The College also began renovation of faculty and teaching labs in the Biological Sciences Center on the St. Paul campus to make way for active-learning labs to debut in 2019.

Celebrating milestones

The College celebrated several milestones in 2017 including the 75th anniversary of Cedar Creek Ecosystem Science Reserve, the 50th anniversary of the Department of Ecology, Evolution and Behavior and the 10th anniversary of our award-winning Foundations of Biology program.

Launching a campaign to build capacity

We launched an ambitious \$21 million fundraising effort this fall -- the Campaign for the College of Biological Sciences -- in conjunction with the public launch of the University's Driven campaign. The campaign outlines seven key areas of opportunity where additional support would move the needle on our efforts and position the College for greater success.

A record-breaking year for fundraising

This was the College's most successful year to date for fundraising. In FY17, we raised \$2.1 million, a record for CBS. So far in FY18, we have doubled that number raising more than \$5 million including several gifts supporting campaign priorities.

A step forward for the CBS Conservatory

The College successfully secured state support of \$4.4 million of the \$6.6 million needed to build a new Conservatory on the St. Paul campus. Planning for the new facility is currently underway.

Expanding the vision for plant biology

In FY17, the Department of Plant Biology changed its name to the Department of Plant and Microbial Biology. The graduate program and undergraduate major associated with the department followed suit. The name change represents a more expansive vision for the future. The department hired several new faculty to build capacity in the areas of plant and microbial biology.

A new era at Itasca

Longtime director of Itasca Biological Station and Laboratories Dave Biesboer retired in 2017. Jonathan Schilling became the new director at the start of 2018. A deal to purchase land adjacent to Itasca State Park with an eye to expanding research at Itasca was completed. The University purchased 60 acres just outside the park a few miles from the station where researchers will be able to set up long-term experiments.

COLLEGE SNAPSHOT

A brief overview of the makeup of the College and awards for faculty and staff in 2017.

BY THE NUMBERS

- 2,190 undergraduates
- 254 graduate students
- 110 postdoctoral researchers
- 141 faculty members

FACULTY AND STAFF AWARDS AND RECOGNITION

Sixteen faculty received professional, University or collegiate awards in 2017. Two College of Biological Sciences faculty were elected fellows of the American Academy of Arts and Sciences. Since 1923, only 61 U of M faculty have earned this distinction. [See the complete list](#) of CBS faculty and staff awards.

STUDENTS

UNDERGRADUATE STUDENTS

The College welcomed its largest freshman class to date while remaining highly selective.

TOTAL ENROLLMENT [Fall 2017]

2,190 undergraduates enrolled [Fall 2017]

- 1,474 From Minnesota (67.3%)
- 419 first-generation college students (19.1%)
- 565 students of color (25.8%)
- 95 international students (4.3%)
- 590 freshmen
- 107 transfer students
- 1493 continuing students

FRESHMAN CLASS (class of 2021)

590 freshmen from a pool of 7,610 applicants [fall 2017]

- 411 From Minnesota (69.6%)
- 114 first-generation college students (19.6%)
- 153 students of color (25.9%)
- 26 international students (4.4%)
- 92.0% percentile, average high school rank of 2017 freshman class
- 72.0% graduated in the top 10% of their high school class and almost half (45.2%) in the top 5%
- 107 transfer students (67 NAS; 5 IUT; 35 ICT)

STUDENTS CONT.

UNDERGRADUATE MAJORS

Number of students enrolled in CBS majors* from 2014-2018

	Spring 2014	Spring 2015	Spring 2016	Spring 2017	Spring 2018
Biochemistry B.S.	336	329	286	275	351
Biology B.S.	409	396	430	437	653
Ecology, Evolution and Behavior B.S.	87	91	89	76	78
Genetics, Cell Biology and Development B.S.	288	296	276	276	305
Microbiology B.S.	115	116	126	123	129
Neuroscience B.S. (and double majors)	230	231	236	242	337
Plant and Microbial Biology B.S.	16	15	20	18	25

*Includes multiple majors

BACHELOR OF SCIENCE DEGREES AWARDED

	2014/15	2015/16	2016/17
Biochemistry	94	115	116
Biology	168	158	187
Ecology, Evolution and Behavior	33	30	29
Genetics, Cell Biology and Development	72	77	85
Microbiology	29	38	39
Neuroscience	71	56	62
Plant and Microbial Biology	4	3	8
Total	471	476	526

UNDERGRADUATE RESEARCH

- 367 students took directed research or directed studies (414 including non-majors who took directed research through CBS)
- 587 CBS students and 3,118 non-majors participated in course-based research experiences (CUREs)

LEARNING ABROAD

- 144 students participated in learning abroad during the 2016-17 academic year.
- The College offered one freshman seminar abroad: "Innovation and Imagination in Ireland," taught by John Ward.

RETENTION AND GRADUATION RATES

- First-year retention rates 94.84% (UMTC Avg 93.43%)
- Four-year graduation rates 77.41% (UMTC Avg 68.43%)

STUDENTS CONT.

TOTAL UNDERGRADUATES SERVED (including non-majors)

Campus	Degree Status	Primary College	Fall 2016 Count	Spring 2017 Count	Summer 2017 Count	Acad Year Unduplicated Count
UMNTC	Degree-Seeking Undergrad	CBS	2,105	1,932	167	2,215
UMNTC	Degree-Seeking Undergrad	Other	3,207	3,338	206	5,908
UMNTC	Non-Degree	Other	1,188	305	85	1,529
Other	Degree-Seeking Undergrad	Other	8	9	7	24
Other	Non-Degree	Other	10	0	0	10
Total			6,518	5,584	465	9,686

UNDERGRADUATE AWARDS AND RECOGNITION

CBS undergraduates received a number of major awards received by the Class of 2017.

- Astronaut Scholarship - Michael Blazanin
- Scholarly Excellence in Equity And Diversity Award - Zineb Alfath
- Discovery Scholar - Mikayla Enger
- Gilman Scholarship - Sowda Ahmed
- Page Scholar - Danial Jando, Sey Lee, Alex Tang
- Gold Global Excellence Scholarship - Fadzai Manungo
- American Pancreatic Association Young Investigator Award - Audrey Lane
- Tom Burnett Leadership Program - Adam Cox, Akila Pai, Jake Schauburger
- 56 students were invited to join Phi Beta Kappa

STUDENT SUPPORT [2016-17 academic year]

CBS Student Services saw continued growth in student usage with a total of **4,283 student appointments** across academic advising, career development and student engagement. [See the 2016-17 CBS Student Services summary.](#)

GRADUATE STUDENTS

Enrollment in CBS graduate programs remained consistent with notable increases in some graduate programs.

ENROLLMENT

254 graduate students were enrolled in the College's in six graduate programs in fall 2017.

	2013	2014	2015	2016	2017
Biochemistry, Molecular Biology and Biophysics	71	67	69	70	77
Ecology, Evolution and Behavior	66	64	65	61	60
Molecular, Cellular, Developmental Biology and Genetics	49	47	45	41	45
Genetic Counseling (M.S.)	12	12	14	16	16
Microbial Engineering	10	10	10	9	11
Plant and Microbial Biology	44	46	46	40	45

STUDENTS CONT.

GRADUATE DEGREES AWARDED

- Biochemistry, Molecular Biology and Biophysics - 1 M.S. / 14 Ph.D.
- Ecology, Evolution and Behavior - 8 Ph.D.
- Molecular, Cellular, Developmental Biology and Genetics - 8 M.S. (Genetic Counseling) / 6 Ph.D.
- Microbial Engineering - 2 M.S.
- Plant and Microbial Biology - 1 M.S. / 6 Ph.D.

EXTERNAL AND UNIVERSITY AWARDS

CBS graduate students received 29 fellowships and grants including a Fulbright Fellowship, the Harley Medal and an American Heart Association Fellowship. [See the complete list](#) of external and University awards.

THESES AND DISSERTATIONS

Graduate students produced 38 theses and dissertations in 2017. [See the complete list](#) of theses and dissertations.

FACULTY AND RESEARCH

FACULTY

Four faculty members were promoted to full professor, four faculty members retired and we welcomed seven new faculty members in 2017. In 2017, the College successfully recruited a number of top candidates for faculty positions due, in part, to a proactive spousal accommodation strategy. We were also able to retain two of our top faculty despite very lucrative offers from other institutions.

PROMOTIONS, RETIREMENTS AND NEW FACULTY

Promotions

- Elizabeth Borer (Associate to Full - Ecology, Evolution and Behavior)
- Jeannine Cavender-Bares (Associate to Full - Ecology, Evolution and Behavior)
- Do-Young Kim (Associate to Full - Biochemistry, Molecular Biology and Biophysics)
- Eric Seabloom (Associate to Full - Ecology, Evolution and Behavior)

Retirements

- David Fan (Genetics, Cell Biology and Development)
- Gary Nelsestuen (Biochemistry, Molecular Biology and Biophysics)
- David Biesboer (Plant and Microbial Biology)
- Dennis Livingston (Biochemistry, Molecular Biology and Biophysics)

New Faculty

- Jonathan Schilling (Associate Professor, Plant and Microbial Biology)
- Daniel Bond (Associate Professor, Plant and Microbial Biology)
- Jeff Gralnick (Associate Professor, Plant and Microbial Biology)
- Abdi Warfa (Assistant Professor, Biology Teaching and Learning)
- Krista Redlinger-Grosse (Associate Director for Clinical Training, Genetic Counseling)
- Forest Isbell (Assistant Professor, Ecology, Evolution and Behavior)
- Kathryn Fixen (Assistant Professor, Plant and Microbial Biology)

- Trinity Hamilton (Assistant Professor, Plant and Microbial Biology)
- Sarah Malmquist (Teaching Assistant Professor, Biology Teaching and Learning)

FACULTY AND RESEARCH CONT.

RESEARCH

Research Publications

College of Biological Sciences faculty published nearly 600 studies and articles in almost 400 journals authored or co-authored by faculty with primary appointment in CBS including the following high-impact journals:

- 3 in *Science*
- 30 in *Nature**
- 13 in *Proceedings of the National Academy of Sciences*

[See the complete list](#) of 2017 research publications.

**Including associated Nature journals*

ACTIVE GRANTS

The College had 199 active grants including 71 exceeding \$500,000. [See the complete list](#) of active grants. Major sources of funding included:

- \$24.8 million (total sponsored research spend)
- \$ 10,661,645 NIH
- \$ 6,008,157 NSF
- \$824,401 USDA
- \$1,615,464 LCCMR

GRAND CHALLENGES IN BIOLOGY POSTDOCTORAL PROGRAM

The Grand Challenges in Biology Postdoctoral Program hired its second cohort. The 2017 cohort included the following teams/projects:

- **Examining the influence of fungal community composition and substrate chemistry on the soil carbon response to N fertilization.** / Postdoctoral Researcher: Allison Gill / Faculty Advisors: Sarah Hobbie (EEB) and Jonathan Schilling (PMB)
- **Understanding the relative role of genetic and environmental factors controlling the microbiome of wild baboons.** / Postdoctoral Researcher: Laura Grieneisen / Faculty Advisors: Ruth Shaw (EEB) and Ran Blekhman (GCD)
- **Mechanisms of endocrine control of developmental processes and integration into educating the next generation of biologists.** / Postdoctoral Researcher: Jennifer (Richter) Hicks / Faculty Advisors: Michael O'Connor (GCD), Ann Rougvie (GCD) and Anita Schuchardt (BTL)
- **Evaluating the roles of ecological and historical processes in biological invasions.** / Postdoctoral Researcher: Jesus Pinto Ledezma / Faculty Advisors: Jeannine Cavender-Bares (EEB) and Daniel Larkin (CFANS)

PUBLIC ENGAGEMENT

The College expanded outreach activities through continued investment in Market Science, increased programming and community collaborations at Cedar Creek and Itasca, K12 outreach through Cedar Creek, the CBS Conservatory and InSciEd Out, and College events designed to engage the public and build support for the Campaign for the College of Biological Sciences.

OUTREACH PROGRAMMING

- **Market Science** expanded programming to greater Minnesota with dates in Bemidji, Park Rapids, Itasca State Park (in conjunction with Itasca Biological Station and Laboratories) and East Bethel (in conjunction with Cedar Creek Ecosystem Science Reserve).
- **Cedar Creek Ecosystem Science Reserve** had a record-breaking year in terms of public engagement 4,493 K-12 students and their teachers, 1,313 university students and their professors, and 4,733 members of the general public. The station introduced a wildlife tracking training program and citizen science project and expanded opportunities for the local community and broader public to visit and learn.
- **Itasca Biological Station and Laboratories** worked with naturalists at the park to offer joint programming between the field station and state park including station tours and interpretive hikes.
- **InSciEd Out** reached 2,655 students in six Twin Cities metro areas (West St. Paul, Richfield and White Bear Lake) elementary and middle schools, offering training for teachers and providing volunteer opportunities to CBS undergraduates interested in STEM education.
- **College of Biological Sciences Conservatory** welcomed approximately 700 students and teachers who toured the Conservatory and encountered plants they might never see otherwise. In addition, more than 1,500 people -- including faculty and students, artists, garden clubs and plant societies -- visited the Conservatory.

In addition, the CBS Conservatory organized the *Roots to Healing* exhibition, which was on display at Northrop Gallery from March through December 2017. More than 100 people attended the reception for the exhibition, which was designed to raise the visibility of the CBS Conservatory. The exhibition attracted more than 100 visitors monthly, and thousands of additional visitors saw the exhibition.

PUBLIC EVENTS

Petri Dish: The College's signature event series regularly attracts 60-80 attendees including alumni, donors, the public, and members of the University community. Topics for spring and fall 2017 included:

- *Setting the table for 10 billion* (Dan Voytas, Jason Hill, Elizabeth Dunbar)
- *The future of water in the land of 10,000 lakes* (Jacques Finlay, Steve Woods, Valery Forbes)
- *Resetting the conversation on science* (Sehoya Cotner, Shawn Otto, Valery Forbes)
- *Our parasites, ourselves* (Marlene Zuk, Kristen Nelson, Tiffany Wolff)
- *Where do we go from here?* (Elizabeth Borer, Tracy Twine, Gabriel Chan)
- *A revolution in the making* (Michael Smanski, Ryan Langlois, Heather Zierhut)

SciSpark: Focuses on women in science at the U, attracted a broad audience that included donors and alumni including 300+ registered / 200+ attendees.

ADVANCEMENT

The College raised more money than ever before in 2017, engaged more alumni and donors, and continued to raise the visibility of faculty research through media mentions.

DEVELOPMENT

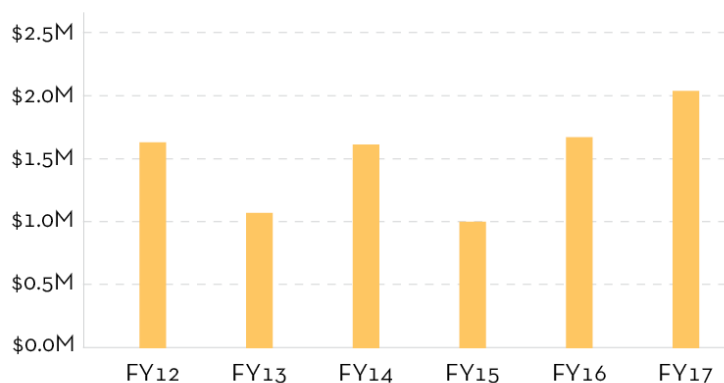
\$2.1 million raised from private donors up from \$1.7M the previous fiscal year.

609 donors who gave gifts that included:

- 2 gifts of \$250K
- 13 gifts between \$100-\$249K
- 36 gifts of \$10,000 or more

366 contacts with donors up from 159 the previous year.

CBS Giving History



SCHOLARSHIPS AND FELLOWSHIPS

In fall 2015 the College awarded a total of 33 scholarships (totaling \$80,500) to incoming freshman and no four-year scholarships. In 2017, the College committed over \$1 million in scholarships and fellowships. Significantly, the College awarded 49 four-year freshman awards (compared to zero in 2015), and 35 graduate fellowships (compared to 24 in 2015).

ALUMNI

In 2017, CBS added a dedicated alumni relations officer increasing capacity. We continued the CBS alumni-student mentor program with 45 matches in 2017. More than half of the College's alumni live in Minnesota. Here's an overview of the CBS alumni community:

- Total alumni: 15,559
- Alumni with B.S. degrees: 12,459
- Alumni with M.S. or PhD degrees: 3,186
- Alumni living in Minnesota: 8,675

ADVANCEMENT CONT

COMMUNICATIONS (MEDIA MENTIONS)

CBS faculty and the College received 50+ media mentions including the *New York Times*, *Wall Street Journal* and *National Geographic*, 20+ mentions in University publications including *Inquiry*, *Brief*, and the U homepage. Here are a few of the high-profile media mentions:

- [Those Beautiful, Brainless, Dangerous Jellyfish of ‘Spineless’](#) (*Wall Street Journal*)
- [These Are Not Your Father’s GMOs](#) (*MIT Technology Review*)
- [Hunt Elephants to Save Them? Some Countries See No Other Choice](#) (*New York Times*)
- [Trillions of Flies Can’t All Be Bad](#) (*New York Times*)
- [50 Years On, Chimps Studied By Jane Goodall Still Reveal Discoveries](#) (*National Geographic*)
- [Wild and Captive Chimpanzees Share Personality Traits With Humans](#) (*New York Times*)
- [First Person: George Weiblen](#) (*American Scientist*)

FINANCIALS

FY17 OPERATING BUDGET

The College’s FY17 operating budget included **\$98 million** in expenditures. The largest sources of revenue included:

- \$26.2 million tuition and fees
- \$23.8 million state appropriation
- \$24.8 million faculty grants and contracts
- \$1.2 million private gifts and endowment income

IN DETAIL

FACULTY AND STAFF AWARDS AND RECOGNITION

- American Academy of Arts and Sciences: Sarah Hobbie
- American Academy of Arts and Sciences: Marlene Zuk
- Pew Scholar in the Biomedical Sciences: Wendy Gordon
- Guggenheim Foundation Fellowship: Susan Jones
- Raymond and Beverly Sackler International Prize in the Physical Sciences: Charalampos Kalodimos
- Cincinnati Zoo Wildlife Conservation Award: Craig Packer
- Sewall Wright Award, American Society of Naturalists: Ruth Shaw
- Exemplar Award, Animal Behavior Society: David Stephens
- 2017 McKnight Land-Grant Professor: Yaniv Brandvain
- University of Minnesota Early Innovator Award: Mikael Elias
- University of Minnesota Impact Award: Perry Hackett
- Distinguished McKnight University Professor: Reuben Harris
- University of Minnesota President's Community-Engaged Scholar Award: George Weiblen
- University's 2016-17 Outstanding Contributions to Graduate and Professional Education Award: Meg Titus
- Stanley Dagley-Samuel Kirkwood Undergraduate Education Award: Deena Wassenberg
- 2017 University of Minnesota President's Award for Outstanding Service - Nikki Letawsky Shultz
- 2016-2017 CDN Golden Gopher Merit Award - Rebecca Dordel
- 2017 NACADA "Best of Region 6" Award for Advising for Academic Recovery presentation - Martha Scott Johnson
- 2017 University of Minnesota Communicators Forum Maroon and Gold Awards - CBS Communications & Marketing
- U Brand Award - College of Biological Science Viewbook
- Maroon Award - Design, Multi-Page Print - College of Biological Science Viewbook

GRADUATE STUDENT AWARDS AND RECOGNITION

- Brand Fellowship, NSF DDIG - John Benning (PMB)
- DOVE Fellowship - Zacky Ezedin (PMB)
- Cedar Creek Summer Fellowship - Shan Kothari (PMB)
- MPGI Graduate Student Recruiting Grant - Chaochih Liu (PMB)
- Harley Medal (International Mycorrhizal Society) - Lotus Lofgren (PMB)
- Dayton Fellowship - Rebekah Mohn (PMB)
- Women's Center, MacPherson Scholarship - Katherine Sammons (PMB)
- UMN DDF, Big Ten Academic Alliance Smithsonian Fellowship - Christina Smith (PMB)
- Fulbright Fellowship - Jason Thomas (PMB)
- DOVE Fellowship, ICGC Fellowship - Redeat Tibebu (PMB)
- NSF Fellowship via Grad School - Callie Gustafson (MCDB&G)
- NIH F31 - Jeff Barcus (MCDB&G)
- DDF - Taylor Reid (MCDB&G)
- DOVE - Sze Cheng (MCDB&G)
- American Heart Association Award - Amanda Hayward (BMBB)
- Doctoral Dissertation Fellowship - Cheng Her (BMBB)
- Doctoral Dissertation Fellowship - Katherine Muratore (BMBB)
- 3M - Eric Aird (BMBB)
- NSF - Willow Coyote Maestas (BMBB)
- NIH F31 - Megan McCarthy (BMBB)
- NIH F30 - Lien Phung (BMBB)
- Doctoral Dissertation Fellowship - Andrew Honsey (EEB)

- Interdisciplinary Doctoral Fellowship - Danielle Drabeck (EEB)
- American-Scandinavian Foundation fellowship & ICGC Global Food Security Fellowship - Evelyn Strombom (EEB)
- NSF DDIG - Jessie Tanner (EEB)
- NSF DDIG - Lauren White (EEB)
- UMII MnDRIVE Fellowships - Miriam Gieske (EEB)
- UMII MnDRIVE Fellowships - Lauren White (EEB)
- Honourable mention for the NSF Graduate Research Fellowship - Craig See (EEB)

THESES AND DISSERTATIONS

BIOCHEMISTRY, MOLECULAR BIOLOGY AND BIOPHYSICS - M.S.

- Rebecca Maysonet-Sanchez - *Anaerobic Shewanella physiology: An unusual respiratory substrate and an unusual respiratory partner*

BIOCHEMISTRY, MOLECULAR BIOLOGY AND BIOPHYSICS - Ph.D.

- Brett Anderson - *APOBEC3 transcriptional regulation and HIV-1 restriction in T lymphocytes*
- James Christenson - *Exploring beta-lactones as an unexpected link between hydrocarbon and natural product biosynthesis in bacteria*
- Alysha Dicke - *Biophysical characterization of interactions between two membrane proteins: SERCA and sarcolipin*
- Robert Evans - *Protein structures elucidating the post-ribosomal biosynthesis of pyrroloquinoline quinone*
- Adam Harvey - *The role of DNA repair & regulatory proteins in the maintenance of human telomeres and their control of cellular immortalization*
- Amy Hauck - *Protein carbonylation in the adipocyte nucleus*
- Matthew Jensen - *Addressing unanswered questions in bacterial hydrocarbon biosynthesis*
- Bryan Jones - *Evolution-guided engineering of alpha/beta hydrolases*
- Jackie McCourt - *Biophysical and functional consequences of sequence changes on dystrophin and utrophin*
- Maya Raghunandan - *Novel roles for the Fanconi anemia pathway protein FANCD2 in the recovery of stalled replication forks*
- Tory Schaaf - *Novel fluorescence tools for the discovery of cardiac calcium pump therapeutics*
- Kaylee Steen - *FABP4 regulation of UCP2 expression in inflammatory and redox signaling in adipose tissue macrophages*
- Sujin Yeom - *Hybrid silica-microbial materials for bioremediation applications*
- Kun Zhou - *tRNA fragments: Expression and function in ovarian cancer*

ECOLOGY, EVOLUTION AND BEHAVIOR - Ph.D.

- Amy Kendig - *Host diet and pathogen diversity: how soil nutrients affect plant virus interactions*
- Marta Lyons - *Moving up: Using climate, physiology, and gene flow to characterize current and future geographic range limits in montane salamanders*
- Clare Kazanski - *Soil carbon cycling responses to elevated CO₂ and nitrogen addition*
- Anika Bratt - *Multiple element limitation of primary producer communities across ecosystems and contribution of leaf litter to nutrient export during winter months in an urban residential watershed*
- Adam Clark - *Constraints and tradeoffs: Toward a predictive, mechanism-based understanding of ecological communities*
- Sarah Helene Jaumann - *Choosiness as a component of life history strategies in cabbage white butterflies*
- Carl Stenoien - *Behavioral ecology of parasitoid diet breadth and insect defenses*
- Matthew Kaiser - *Transgenerational fecundity compensation and post-parasitism reproduction by aphids in response to their parasitoids*

MOLECULAR, CELLULAR, DEVELOPMENTAL BIOLOGY AND GENETICS - Ph.D.

- Jami Erickson - *A comparative approach to deciphering the molecular mechanisms of scar-free wound healing*
- Cosmo Saunders - *Regulation of directional cell migration from within the nuclear envelope*
- Barbara Tschida - *The Sleeping Beauty Transposon System for forward and reverse genetic studies of liver cancer*
- Allison O'Rourke - *A role for cyto- and cyto actin at the sarco/ endoplasmic reticulum-mitochondrial interface*
- Monica Akre - *Genetic analysis of mutation and response in cancer*
- Elizabeth Thompson - *The role of Fanconi anemia proteins in DNA repair, replication stress and genome stability*

MICROBIAL ENGINEERING - M.S.

- Matthew Benjamin Arriola - *The sequencing, assembly and annotation of sugar producing green algae and the design of a low cost turbidostat*
- Bao Hing Chan - *Adaptive expansion of biodegradation by *Pseudomonas putida* F1*

PLANT AND MICROBIAL BIOLOGY - M.S.

- Derek Nedveck - *The legume-rhizobium mutualism: How variation in natural populations affects the outcome of the mutualism*

PLANT AND MICROBIAL BIOLOGY - Ph.D.

- Jing Chen - *The study of tryptophan-dependent indole-3-acetic acid biosynthesis pathways in maize endosperm*
- Elizabeth Fallon - *Physiological evidence for environmental filtering of oak (*Quercus* L.) at local and large scales*
- Xin Li - *A barley UDP-glucosyltransferase provides high levels of resistance to trichothecenes and *Fusarium* Head Blight in cereals*
- Matthew Nelson - *Identification and Characterization of Bacterial Genes Involved in the Medicago-Sinorhizobium symbiosis*
- Diana Trujillo - *Comparative analysis of nodulation-related small secreted peptides across legume species*