

IOWA

Department of Biology

Winter 2021

Biology At Iowa

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Dear Alumni and Friends,

Greetings from the Department of Biology! I am very pleased to serve as the interim chair of the department this year and have greatly enjoyed getting to know all of the wonderful faculty, students, and staff. I would also like to thank Professor Diane Slusarski for her tireless work on behalf of the department during her five years as DEO. As the university transitions to normal operations, the Department of Biology continues to be at the forefront of teaching, research, and service. The number of Biology majors continues to grow, particularly with student interest in the interdisciplinary Neuroscience major that is housed in the Department of Biology. We continue to provide amazing hands-on learning opportunities for students across all levels of the curriculum, including working in faculty labs to gain world-class research experience. Our undergraduate students are thriving as they move on to careers in the health and biological sciences, with students gaining admission to prestigious graduate programs and medical schools. Faculty also continue to generate cutting-edge research across a wide variety of areas in the biological sciences, from studying the protective role of progesterone in preventing hearing loss to employing environmental DNA to detect the presence of invasive species. Graduate students play an integral role in these research discoveries as they push the boundaries of science in pursuit of developing their own knowledge and skills. One notable example this year was a paper published in *Nature*, where the first-author graduate student developed new techniques for studying how break-induced replication (BIR) of DNA operates throughout its repair cycle. Faculty have also received notable awards for their service this year including the College of Liberal Arts and Sciences Collegiate Teaching Award and the inaugural Advancing Understanding in Diversity, Equity, and Inclusion (DEI) Award. Needless to say, the accomplishments in the Department of Biology across all of our endeavors are greatly facilitated by the support of our generous alumni and friends. Thank you!

Jodie Plumert, Ph.D., Interim Chair/Departmental Executive Officer (DEO)



Dear Alumni, Friends, and Colleagues,

In 2016, I became the first female chair in the 165-year history of the department with the unanimous support of my colleagues. My vision was to attract quality students and faculty, and to increase external funding and national/international recognition. I worked with an amazing group of faculty, staff, and students, and I am proud of what we accomplished in my five years as Departmental Executive Officer (DEO). We reimagined our undergraduate programs and brought experiential learning to the forefront, while also managing a dramatic increase in our teaching with now more than 1,000 undergraduate majors as well as significant growth in our service teaching. We successfully recruited two tenure track faculty by creating partnerships with other stakeholders on campus, as well as two instructors and two teaching lab coordinators. To enhance our experiential learning capabilities, we undertook renovations to create a fusion of technology and wet lab instructional areas. We worked to deliver outstanding educational opportunities to our students and ensure that our students gain broad hands-on experience with biological methods and learn to think as well as communicate in rigorous and creative ways. I enjoyed seeing the growth of the Latham Science Engagement Initiative, supported by Bob and Sue Latham, and overseeing the restructuring of our investigative labs to include technological advances that allow students to collect a wealth of biological data and answer fundamental scientific questions concerning living systems.

Structuring current biological questions and the development of analytical approaches to answer them are key skills needed for our students to excel in today's world and an important component of independent undergraduate research projects. I am most grateful for the constant support and encouragement from Linda and Rick Maxson and their generous contributions for undergraduate research.

Research productivity is critical for external funding and national recognition, and research infrastructure as well as graduate students play essential roles in our success. Our iBio Graduate Program provides a forward-looking training environment to prepare our graduates for productive careers in the life sciences. Our efforts were aided by support from the Developmental Studies Hybridoma Bank (DSHB) for our rotation program and graduate summer support from Drs. Bob and Carol Lynch, Dr. Michael Dykstra, and many other alumni. Moreover, I have enjoyed a productive collaboration with the Carver Charitable Trust to spearhead substantial upgrades to the advanced microscopy center and genomics research cores. These contributions will foster innovative research and generate impactful discoveries for years to come.

I took on the role as DEO because I believed in the faculty and staff in Biology and our ability to make great strides in becoming a STEM destination. I am ever grateful to all of our alumni and friends that helped us towards this goal!

Thank you and have a safe and happy holiday season. **Diane Slusarski, Ph.D., Professor of Biology**



New antibody collections for Neuroscience at the DSHB

The Developmental Studies Hybridoma Bank (DSHB) was established as a national resource by the National Institutes of Health (NIH) and is housed in the Department of Biology. The DSHB maintains an open-source collection of widely-used hybridomas and the monoclonal antibodies (mAbs) they produce and distributes these reagents to support the work of the scientific community worldwide. As the need to better understand the structure of the human brain and nervous system has grown, the need for rigorously characterized and highly reproducible immunostaining and other molecular reagents has grown as well. The DSHB is happy to announce the addition of two large and well-validated collections of hybridomas related to neuroscience research that were developed with funding from the NIH: the NeuroMab Project and the BRAIN Initiative Cell Census Network (BICCN). NeuroMab was created in 2005 by James Trimmer at UC Davis and the BICCN in 2019 as part of the NIH's BRAIN Initiative. Beginning in late 2021, the DSHB expects to distribute over 500 NeuroMab and 100 BICCN hybridomas, representing over 300 proteins of interest in the brain. As with the rest of the antibodies at the DSHB, these will be made available to researchers at the lowest possible cost to facilitate their use in basic research and teaching. For more information, contact the DSHB via phone or email (319-335-3826, dshb@uiowa.edu), or visit dshb.biology.uiowa.edu.

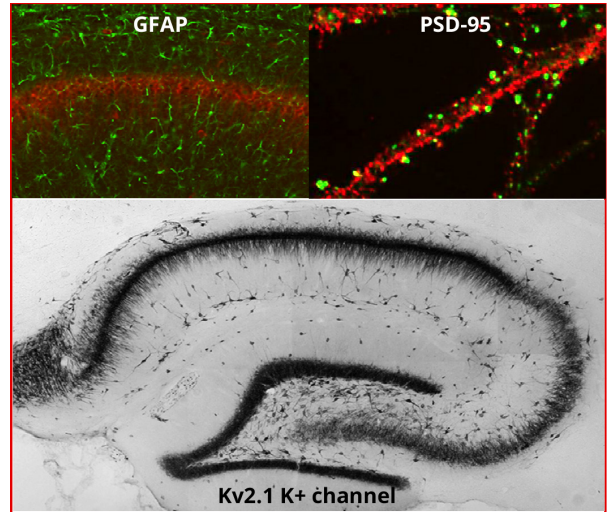


Douglas Houston, Ph.D.
Professor of Biology,
DSHB Interim Director



David Soll, the Carver/Witschi Professor of Biology, will retire on New Year's Day 2022, after 49 years of research, teaching, and service. At the University of Iowa, he studied a variety of biological questions, including developmental memory and

timing, dimorphism in infectious yeast, phenotypic switching, cell motility, removing the odor from pig excrements, molecular evolution, HIV, epidemiology, antibodies, and more. He published over 400 papers and received over 50 grants, grant renewals, and contracts. He obtained 11 patents during his career. Dr. Soll directed the W.M. Keck Dynamic Image Analysis Facility between 1997 and 2020 and the Developmental Studies Hybridoma Bank between 1985 and 2020, a national resource created by the National Institutes of Health (NIH). Both facilities are housed in the Department of Biology. He was also the Principal Investigator of the Program Project on the Basic Biology of Cell Motility, funded by NIH for 24 years. Dr. Soll is a Fellow of the American Association for the Advancement of Science as well as a Fellow of the American Academy of Microbiology. He was the recipient of the Lucille K. George Medal from the International Society of Human and Animal Mycology, the Rhoda Benham Medal from the Medical Mycology Society of the Americas, and the Regents Award for Faculty Excellence from the University of Iowa. He has been on the editorial boards and associate editor of numerous journals, and the North American Editor of *Microbiology*, and has served on a number of advisory boards for institutes, universities, and companies. Between 1978 and 1982, he was a member of the Cell Biology Panel at NIH. He believes his most important accomplishments were to mentor 21 PhD students; 8 Master's students; 38 post-doctoral fellows, research scientists and visiting scholars; and well over 100 undergraduate researchers. Dr. Soll proudly notes that all three of his children went to the University of Iowa as undergraduates. In his retirement, he will continue his work on timer theory, the computer-assisted analysis of paintings in the field of Art History, the evolution of fungal pathogens, and keeping himself alive after the age of 80.



NEUROMAB ANTIBODIES AT THE DSHB. NeuroMab antibodies robustly label key components of the nervous system including glia (GFAP), synapses (PSD-95), and layers of the hippocampus (Kv2.1 K+ channel).



Diana Kruse retired in 2020 after more than 30 years with the Department of Biology; more specifically, the DSHB (Developmental Studies Hybridoma Bank). She began her career in 1987, and in 1992, she left to attend graduate school. In 1994, after graduating, Diana returned to the DSHB and remained an important contributor to the growth of the DSHB. She was the "calm in the storm" as the DSHB expanded. Her tireless efforts to switch to a modern website and the expanding antibody collection will forever be a part of the DSHB. Diana's fondest memory is "working with a great group of people." The feelings are mutual, proven by the number of people excited to see her when she visits the office. Diana continues to live in Iowa City where she can devote more time to gardening and, of course, spoil her many cats. Even though she is greatly missed, we want nothing more than for Diana to enjoy her much deserved retirement.



Faculty & Staff Updates

Faculty Promotions

John Manak and **Maurine Neiman** were promoted to full professors effective July 1, 2021.

Dr. Manak joined the Department of Biology in 2008. His research laboratory studies the genetic basis of human disease, first by identifying the genes associated with genetic disorders in patient cohorts, and then functionally validating their disease association using fruit flies and vertebrate model systems. The disorders studied in his laboratory for which he has discovered new genes include spina bifida, orofacial clefting, and renal agenesis, and more recently his laboratory has shown that immune system activation can lead to exacerbation of epilepsy. Dr. Manak's professional associations include the American Society of Human Genetics and the Genetics Society of America among others. He is a member of the Department of Biology's Diversity, Equity, and Inclusion (DEI) Committee as well as the Graduate Recruiting and Admissions Committee, and is also a faculty member in the Department of Pediatrics at the University of Iowa's Carver College of Medicine.



Dr. Neiman has been with the Department of Biology since 2008. She is jointly appointed as a Professor in the Department of Gender, Women's, and Sexuality Studies. Her research focuses on the evolution of sexual reproduction using *Potamopyrgus antipodarum*, a freshwater snail native to New Zealand. Dr. Neiman is the Preprint Editor and a Handling Editor at the Royal Society of London's *Proceedings B*. She has received numerous science and service awards throughout her career including but not limited to the President's Award for Outstanding Dissertation Paper in *Evolution*, the Thomas H. Huxley Award from the Society for the Study of Evolution, the Young Investigator Award from the American Society of Naturalists, and the University of Iowa Outstanding Outreach and Public Engagement Award. She was a founding member of the Diversity Committee at the Society for the Study of Evolution, and she has co-organized multiple international scientific meetings. She serves in a leadership capacity with the science education-focused community organizations—Iowa City Darwin Day and the Iowa City Science Booster Club.



New Faculty and Staff



Amanda Owings joined the Department of Biology in August 2021 as a Visiting Assistant Professor, teaching Diversity of Form and Function. Amanda grew up in Iowa City. Her parents and a number of her siblings and other family members still call this town home. She received her Bachelor of Science in Biology from the University of Iowa in 2006, then did some Post Baccalaureate study and laboratory research at the University of Pennsylvania. In the spring of 2019 she received her PhD from the University of Illinois at Urbana-Champaign in the Ecology, Evolution, and Conservation Biology (PEEC) program. Most recently she was a Postdoctoral Research Fellow in the Department of Anthropology at Emory University before returning to the University of Iowa in her current position.



William Swain joined the Department of Biology in August 2021 as an Adjunct Instructor for the introductory course, Diversity of Form and Function. Most recently, Will was a high school biology teacher for 18 years, most of that was at Highland High School. Will received his Bachelor of Arts degree in Biology and later his Master of Arts in Teaching from the University of Iowa.

Retirement

Paula Bergstrom retired in 2021 after over two decades of service to the University of Iowa. Paula grew up in Sheldon, Illinois, and always had an intense interest in the natural world. That interest led her to the University of Michigan where she studied animal behavior and obtained her M.S. in Ecology and Evolution. Paula's first role at the University of Iowa was as the Assistant Curator with the Herbarium, an extensive repository of preserved plant specimens that was established in the 1800s. After the collection was moved to Iowa State in 2004, Paula became a valued part of the teaching staff in Biology, leading labs for numerous introductory courses as well as upper-level courses in ecology and evolution. Her favorite part of teaching was the people—the camaraderie among colleagues and the students whose enthusiasm and motivation made teaching a rewarding experience. These days, Paula enjoys hanging around the house and caring for her elderly pets, though she looks forward to some world travel, with an eye on an Antarctic or Scandinavian vacation. Happy travels, Paula!



Earth Day 2021

Erin Irish, Associate Professor of Biology, helped organize Earth Day 2021 on the UI campus. The event, held on April 22, 2021, featured a series of short, 30-minute presentations delivered via Zoom from 14 UI faculty and staff explaining climate change and other environmental challenges. Also included was a scavenger hunt organized by UIBIO, the Department of Biology's undergraduate student organization, and a recorded performance of UI Dance students. More than 100 participants attended Earth Day 2021, which was sponsored by the UI Presidential Sustainability Charter Committee. Dr. Irish has served as Co-Chair of the committee since 2019.



Funding Highlights



Lori Adams, Associate Professor of Instruction in Biology and Director of the Iowa Biosciences Academy (IBA), and **Tori Forbes**, Associate Professor, Department of Chemistry and IBA Co-Principal Investigator: \$1,930,483 for 5 years from the National Institutes of Health (NIH) for “Maximizing Access to Research Careers (MARC) at the University of Iowa.”

Adams, along with Co-Investigators **Jan Fassler**, Professor of Biology, and **Bin He**, Assistant Professor of Biology, were awarded an \$85,119 supplement from NIH for the IBA program. For more information on these awards, see page 11.

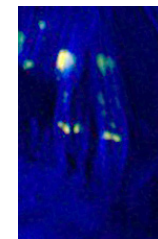
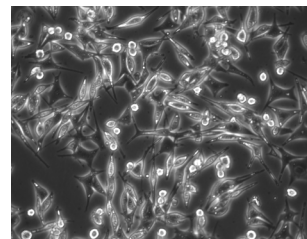
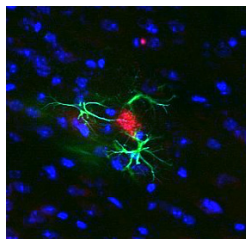
Andrew Forbes, Associate Professor of Biology, was awarded a 2021 Seed Grant, “Massive-scale discovery of new species in our own backyard,” from the UI Center for Global and Regional Environmental Research in the amount of \$22,270. This award will enhance our understanding of global biodiversity by identifying specialist symbiotic mites, nematodes, protists, fungi, and bacteria that live inside the average species of insects collected at the UI’s Ashton Prairie site.

Steven Green, Professor of Biology: \$2,899,116 for 5 years from the National Institutes of Health for “Protection and restoration of cochlear synapses from noise-induced synaptopathy in male and female mice.” The goals of this grant are to determine the hormonal basis for susceptibility to neuropathic noise damage and to use our understanding of the mechanism by which progesterone enhances repair of neuropathic noise damage to identify and develop therapeutics.

Dr. Green was also awarded \$231,734 for 2 years from the US Department of Defense as a subaward from his collaborator at Zebra Biologics, Inc.: “Trk Agonist Antibodies for the Treatment of Hearing Loss.” The purpose of this award is to test an innovative new antibody reagent developed by Zebra Biologics as a means of repairing damage caused by noise to auditory neurons in the inner ear.

Bin He, Assistant Professor of Biology: \$1,878,242 for 5 years from the National Institutes of Health for “Evolution of Stress Response Gene Regulatory Network in a Commensal and Opportunistic Yeast Pathogen.” The goal of this grant is to elucidate the evolutionary changes in the stress response networks in an opportunistic yeast pathogen to both reveal the specific adaptations of pathogenic yeasts to the host and to shed light on the general principles governing how organisms evolve and adapt to new stressful environments.

Alan Kay and **Daniel Eberl**, both Professors of Biology, along with **Zahra Aminzare**, Assistant Professor, Department of Mathematics: \$750,000 for 3 years from the National Science Foundation for “Measuring and mathematically modeling ionic transport in auditory systems.” The goal of this grant is to use novel genetic and physiological tools combined with mathematical modeling to determine constellations of ion transport proteins, including their location and function in generating specialized ionic fluids that drive mechanosensation in auditory systems.



Maurine Neiman and **Douglas Houston**, both Professors of Biology: \$4,915 from the Iowa Academy of Science for “One in a million: leveraging an extraordinary snail to discover fundamental information about the genetic basis of animal symmetry.”

Dr. Neiman also received two supplement awards to her National Science Foundation (NSF) grant, “Genomic and functional tests of mitochondrial-nuclear coevolution,” for a total of \$80,153.

She also received \$14,870 from NSF for a symposium she co-organized, “Genomic Perspectives in Comparative Physiology of Mollusks: Integration across Disciplines.”

In addition, Integrated DNA Technologies, Inc. donated \$5,000 to the Iowa City Science Booster Club, an initiative co-founded by Dr. Neiman in 2015 to support and improve science education in Iowa City.

Diane Slusarski, Professor of Biology: \$222,000 from the Roy J. Carver Charitable Trust for “A Proposal for the development of a Biological Resilience Research Hub,” to facilitate the study Biological Resilience. The award will help create an interdisciplinary framework to understand the fundamental principles by which organisms respond to stressors and adapt to changing conditions to maintain resilience.

Sarit Smolikove, Associate Professor of Biology and Principal Investigator, along with **Josep Comeron**, Professor of Biology and Co-Investigator: \$750,000 for 3 years from the National Science Foundation for “Identifying roles for R-loops in germline DSB repair.” The goal of this grant is to identify the impact of the accumulation of R-loops (abnormal DNA-RNA hybrids) on meiosis.

Christopher Stipp, Associate Professor of Biology: \$10,000 from the Holden Comprehensive Cancer Center at the University of Iowa for “A high throughput screen to identify compounds selectively targeting BAP1-deficient uveal melanoma cells.” The goal of this project is to investigate approved FDA drugs as potential treatments for metastatic ocular melanoma, a rare but deadly disease.

Joshua Weiner, Professor of Biology and CLAS Associate Dean for Research, was awarded a \$377,705 supplement to his National Institutes of Health (NIH) grant, “Elucidating functions of the gamma-protocadherins in CNS development.” This award is a supplement to the Weiner Lab’s existing NIH award focused on a large family of neuronal cell adhesion molecules called protocadherins. The lab is focused on whether individual members of this family play unique roles, and one such protein may have a link to Alzheimer’s disease. The new grant is to extend their studies to knock out the gene encoding this protein to see if its loss affects the progression of Alzheimer’s-like pathology in a mouse model.



Alumni Updates

Originally from Carol Stream, Illinois, **Cassandra (Cassie) Poulos** was drawn to the University of Iowa because of the Department of Biology. “Even though there are tens of thousands of students (at the University of Iowa), the Biology Department felt so comfortable. You knew everyone and would see familiar faces all the time,” says Cassie.



When Cassie entered the UI as a freshman in the fall of 2014, her interest was in pre-medicine. It wasn't until her junior year when she discovered what would eventually become her career as a perfusionist. “I found out about a perfusionist career from my Biology advisor (Anna Gaw), but she wasn't even advising me,” says Cassie. As a student ambassador for the Department of Biology, Cassie would meet and give tours to prospective students and guests. It was during a meeting with prospective students that Anna mentioned perfusion as one of the many careers for Biology students who want to work in healthcare.

After completing her Bachelor of Arts degree in Biology in the spring of 2018, Cassie attended Rush University where she received her Master's degree in Cardiovascular Perfusion in April 2020. Now as a perfusionist at Northwestern Memorial Hospital in downtown Chicago, Cassie says she loves her job. She has experience not only with open heart surgeries but liver and lung transplants and many other procedures.

Cassie says she looks back fondly on her times at Iowa. “Iowa has something for everybody. There truly is something for everyone and their interest level, especially in the Biology Department.” Her advice to students is, “everything leads you on a path and there are so many options along the way. Continue to try different things. I think because there are so many options (at Iowa), it makes it easy to figure your life out.”

During her time at Iowa, Cassie worked in **Diane Slusarski's Lab** for honors research credit. Cassie says Dr. Slusarski's passion for science and research really inspired her. “She was so great. She is so compassionate to the student experience of trying to thrive in a research lab, which is not easy.” Cassie was also a Latham Fellow and later a Teaching Assistant in the Latham Science Engagement Initiative, a fellowship program where students engage the community in thinking about how science impacts their daily lives. The program is based in the Department of Biology and directed by **Lori Adams**, Associate Professor of Instruction and Director of the Iowa Biosciences Academy. She credits Dr. Adams for inspiring her to get better at science communication. “That (program) was super impactful for me. It got me out of my shell in a lot of ways – public speaking and communicating about science and also as a personal development course. It definitely helped me get over my public speaking fears.” Cassie says Iowa changed her life. “Iowa definitely shaped me as a person and had so many opportunities to change me and how I viewed myself.”

SEND US YOUR NEWS! Email biology@uiowa.edu or complete the “Keep-In-Touch” form on our website at <https://biology.uiowa.edu/alumni>



Mark Mattson (Ph.D. in Biology, 1986), a world leading neuroscientist, received an Honorary Doctor of Science degree from the University of Iowa in May 2021. Dr. Mattson, currently a Professor of Neuroscience at Johns Hopkins University, is one of the

most cited neuroscientists in the world. His research has advanced scientific understanding of how the brain ages and of neurodegenerative disorders including Alzheimer's and Parkinson's disease. He is most known for his studies on calorie restriction and intermittent fasting, which has shown to extend the lifespan of rats and mice. Dr. Mattson received his Ph.D. in Biology from the University of Iowa in 1986 after completing his undergraduate degree in Zoology at Iowa State University and a Master's degree in Biology from the University of North Texas. He was elected a fellow of the American Association for the Advancement of Science in 2011 and received an alumni fellow award from the University of Iowa in 2011, which recognizes alumni for outstanding contributions in their profession. For more information about Dr. Mattson's research and background on an article featured in *Iowa Now*, visit stories.uiowa.edu/mark-mattson-honorary-degree.

**Iowa Now article written by Jack Rossi, Communications Specialist, UI Office of Strategic Communication*

In Remembrance

Listed below is the most recent update of the names of Department of Biology alumni and friends who have passed away. Birth name or nickname (if applicable) and deceased date are listed in parentheses.

Source: University of Iowa Center for Advancement and UI Alumni Records

- Barch (Henoeh), Stephanie H.** – Ph.D., 1952 (January 7, 2021)
- Clark, Arthur M.** – B.A., 1947 (January 26, 2021)
- Cooperrider, Tom S.** – M.S., 1955; Ph.D., 1958 (July 14, 2021)
- Davis, Joseph (Steve)** – Ph.D., 1960 (June 7, 2021)
- Ducommun, Dale J.** – M.S., 1953 (January 20, 2021)
- Durkee, Lenore T.** – Ph.D., 1977 (March 23, 2021)
- Jack, Darwin B.** – B.A., 1943 (June 8, 2021)
- Kerkman (Wendel), Thelma** – B.A., 1948 (March 4, 2021)
- Laffoon, John E.** – B.S., 1979 (July 17, 2018)
- Maixner, William (Bill)** – B.A., 1975 (November 2, 2020)
- Prestage, James J.** – M.S., 1955; Ph.D., 1959 (October 13, 2021)
- Rohner, John R.** – B.A., 1948 (February 13, 2021)
- Schubert (Nelson), Mildred N.** – M.S., 1940 (January 16, 2020)
- Smith, Paul E.** – Ph.D., 1962 (February 2021)
- Spence, Willard L.** – M.S., 1959 (May 10, 2021)
- Stone, Benjamin (Ben) C.** – B.S., 2002 (October 14, 2020)
- Stone, Gordon E.** – M.S., 1958; Ph.D., 1961 (May 15, 2019)
- Vigen, Douglas E.** – B.A., 1967 (September 7, 2020)
- Walker, Waldo S.** – M.S., 1957; Ph.D., 1959 (August 28, 2020)

Help Us Go Green!

To receive future Biology newsletters by email, send an email to biology@uiowa.edu and let us know you want to go green!



Faculty and Staff Awards



Daniel Eberl, Professor of Biology and Director of the Interdisciplinary Graduate Program in Genetics, was named a recipient of the 2020-2021 Collegiate Teaching Award by the College of Liberal Arts and Sciences. "Professor Eberl invests significant energy into making personal connections with each student," commented Diane Slusarski, Professor and former Departmental Executive Officer of the Department of Biology. The Collegiate Teaching Awards are given each year to faculty who demonstrate outstanding performance in the classroom, laboratory, or studio. They are recognized by their peers for stimulating and satisfying students' desire to learn, developing innovative and effective methods of presenting the most current and exciting knowledge in their disciplines, and fostering productive and generous mentoring relationships with individual students.



Lori Adams, Associate Professor of Instruction in the Department of Biology and Director of the Iowa Biosciences Academy, UI LSAMP, and Latham Science Engagement Initiative programs, received the inaugural UI Advancing Understanding in Diversity, Equity, and Inclusion (DEI) Award in 2021. The purpose of this award is to recognize research, scholarship, or creative expression conducted within the past three-year period that advances our understanding of diversity, equity, and inclusion.



Maurine Neiman, Professor of Biology, was the recipient of an Iowa Center for Research by Undergraduates (ICRU) Distinguished Mentor Award in 2021. The award honors the work that mentors put in to make their students' experiences successful. Dr. Neiman was also named one of the first-ever UI Faculty Fellows for Diversity, Equity, and Inclusion. She also co-organized a symposium held virtually in 2021 titled, "Genomic Perspectives in Comparative Physiology of Mollusks: Integration across Disciplines" at The Society for Integrative & Comparative Biology. Dr. Neiman also gave a keynote talk for the ASAPbio Preprint Review Event in 2021.



Angie Cordle, an Instructional Services Specialist for the Department of Biology, was one of 15 faculty/instructors chosen to participate in the Design4Online in Fall 2021. Design4Online is a comprehensive program that assists instructors at all experience levels in designing or redesigning online courses through the implementation of best practices and leading online pedagogy. Dr. Cordle has been teaching the Fundamental Genetics course for 8 years during a summer session. Because of COVID-19, Dr. Cordle converted this course to an online format in the summer of 2020. The outcome was well received by students and resulted in increased enrollment for this course in the summer of 2021. Through this program, Dr. Cordle exchanged ideas with other online instructors on campus and learned from experts on ways to make the class the best it can be.

Mary Louise Kelley Staff Excellence Awards

The Mary Louise Kelley Staff Excellence Awards are given annually to recognize staff members of the College of Liberal Arts and Sciences who performed exceptional service or contributed ideas that improved the work of the department or College. Department of Biology Instructional Services Specialists **Angie Cordle**, **Erin Edgar**, **Stephanie Haase**, and **Olga Miakotina**, were named recipients of this award in 2021 for their great dedication and creative problem solving during the challenging 2020-21 academic year. While COVID-19 affected everyone on campus with altering the way they performed their jobs, the Biology lab coordinators went above and beyond in establishing new ways to allow the department to deliver quality face-to-face education to our students.

Mary Jo Small Staff Fellowship

The Mary Jo Small Staff Fellowship is an award that UI staff members may use to help defray costs associated with regional, national, or international meetings or workshops, as well as a variety of other non-academic professional development opportunities on and off-campus. **Hanh Kratz**, Design Engineer, received this award in 2021 to take the Combination Welding Certificate Program at Kirkwood Community College.

Biology Faculty & Staff Years of Service at the University of Iowa

5 Years

Brian Watson
Administrative
Services Coordinator
(DSHB)

10 Years

John Hass
Assistant In
Instruction

15 Years

Brian Berger
Research Associate
(DSHB)

20 Years

Leah Fuller
Research Associate
(Weiner Lab)

25 Years

Michael Dailey
Associate Professor
Claude Pujol
Associate Research
Scientist (Soll Lab)
Jeremy Richardson
Engineering Coordinator

30 Years

Karla Daniels
Associate Research
Scientist (DSHB/
Soll Lab)



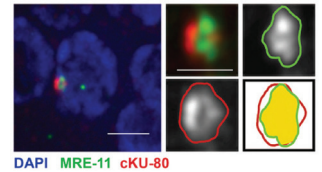
Featured Publications

Featured below are selected publications with Integrated Biology (iBio) graduate students as first author.

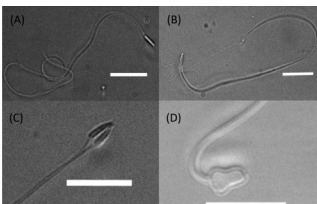
Melinda (Lindy) Brastrom (Slusarski Lab) studied congenital eye defects, a large class of disorders affecting roughly 21 million children worldwide. The work, published in *Biomedicine*, provided new insights into the post-transcriptional regulation of genes required for eye development and their implications in human visual disorders. Brastrom's work used zebrafish to understand the role of an RNA binding protein as a contributing factor in microphthalmia, a congenital defect leading to small eye size.



Kailey Harrell (Cash, Smolikove Lab) studied DNA double strand breaks (DSBs), a form of DNA damage that is particularly harmful to the germline that produce the cells that generate embryos. The germline is equipped to handle simple forms of DSBs, but its response to clustered DSBs (DSBs found in proximity) was unknown. Harrell's work, published in the journal *Mutation Research*, identified that the germline have different responses to clustered DSBs compared to simple DNA damage. These DSBs recruit error-prone DSB repair pathway proteins in a way that is regulated by germline-specific proteins that determine the structure of the chromosomes.

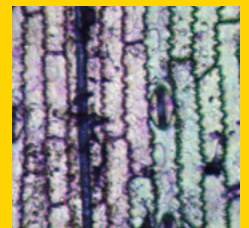


Joseph Jalinsky (Neiman and Logsdon Labs) led a study published in the *Journal of Evolutionary Biology* that demonstrated the sperm generated by male offspring produced on rare occasion by normally all-female asexual lines of our snail model system are often abnormal, especially relative to sperm made males from sexual lines. This result is consistent with a scenario where mutations are building up in the genes that are needed to make sperm in the context of asexual reproduction, suggesting that when sexual reproduction is no longer needed to make offspring, the traits needed for sex will also degenerate.

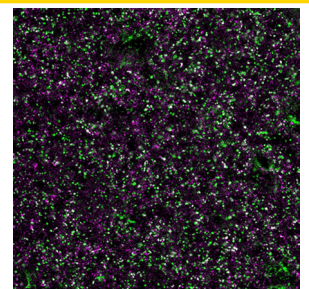


Liping Liu (Malkova Lab) led a study published in *Nature* that used a novel, ddPCR-based method to follow kinetics of Break-Induced Replication (BIR) pathway of DNA repair and to characterize its ability to proceed through replication obstacles.

Krista Osadchuk (Irish Lab) led a study published in *Plant Science* identifying the intersection of leaf-derived signaling with components that contribute to epigenetic changes which may, in turn, manage the distinct global gene expression patterns of vegetative phase change.



David Steffen (Weiner Lab) identified a novel mechanism regulating the form and function of synapses in the brain. Synapses, the connections through which neurons in the brain communicate, come in two main "flavors": excitatory synapses, at which one neuron activates another; and inhibitory synapses, at which one neuron helps prevent the activation of another. Both are critical for normal neural circuit function and disruption of the balance between them can contribute to disorders such as epilepsy and autism. Steffen and his colleagues identified an interaction between two types of synaptic "adhesion molecules," which help link cells together: members of the gamma-protocadherin family and members of the neuroligin family. Mutations in these synaptic adhesion molecule families have been associated with many neurodevelopmental disorders. The work was published in the *Molecular Neurobiology* journal.



Anna Ward and Sofia Sheikh (Forbes Lab) published one of the first big studies of the evolutionary histories of insect "inquilines," a word that describes an animal that uses the home or resources of another species without necessarily harming that species. They showed that a genus of inquiline wasps that uses oak galls (tumor-like growths induced by other wasp species) are far more species-rich and specialized than previously thought. The Forbes Lab has argued that there is much hidden diversity among parasitic wasps and this paper, published in *Insect Systematics and Diversity*, reveals some of the dimensions along which that diversity manifests.



For a list of papers published by Biology faculty, staff, and students, visit biology.uiowa.edu/research/publications

Graduate Scholarships and Awards



The Michael J. Dykstra Graduate Scholarship Fund

provides scholarship support for a graduate student in the Integrated Biology (iBio) Graduate Program. **Christopher Youngstrom** (Cheng Lab) was selected by the Department of Biology Executive Committee to receive this award for summer 2021. Christopher is a Ph.D. student studying the evolution of land plant development. Aside from his research, Christopher has a strong commitment to education in both the classroom and laboratory. He has served as a teaching assistant for several courses in the Department of Biology and has mentored multiple graduate and undergraduate researchers. The Dykstra Graduate Scholarship allowed Christopher significant support to focus on research related to his thesis and submit his findings in a first-authored manuscript. Dykstra, who earned both his B.A. (1969) and M.S. (1971) in Botany at the University of Iowa, believes strongly in higher education and hopes that his gift will provide educational support for future leaders in scientific research and teaching.



The Carol B. and Robert G. Lynch Department of Biology Graduate Fund

is intended to support graduate students as they receive a combination of didactic training, research exposure, and tailored mentoring. The fund will also support career development in the form of graduate student travel to scientific meetings as well as publication costs. **Krista Osadchuk** (Irish Lab) and **Ryan Pellow** (Comeron Lab) were the recipients of this award for summer 2021. Krista studies vegetative phase change in plants using biochemical and bioinformatics approaches. With this award, she was able to carry out extra experiments to test hypotheses generated from her bioinformatics analysis while writing her dissertation. Ryan's research decodes the "language" of genomes in 3D space within nuclei, specifically by addressing how the 3D architecture and transcription impinge on each other to dictate phenotypes. Over the summer, he used this generous award to prepare DNA-seq, RNA-seq, and Hi-C libraries, which were deep sequenced to produce over 3 billion reads. This data allowed him to develop novel bioinformatic tools and characterize the 3D architecture of *Drosophila melanogaster* in response to aging and temperature stress. The Lynch's received their Ph.D. degrees in Zoology from the University of Iowa – the late Carol in 1971 and Robert (Bob) in 1972. Their bequest to the Integrated Biology (iBio) Graduate Program is in honor of their advisers, Hugh Dingle and Joe Hegmann.



The Department of Biology Summer 2021 Graduate Fellowships

which are supported by donations to the department for graduate students, allowed these Integrated Biology (iBio) Ph.D. students listed below to perform their thesis research during the summer. The department is very appreciative of the generosity of our scholarship donors for these awards.

Sydney Arlis (Manak Lab), **Ben Gansemer** (Green Lab), **Tara Hicks** (Smolikove Lab), **Rosemary Lee** (Malkova Lab), **Shulin Liu** (Fassler Lab), **Kendra Musmaker** (Malkova Lab)



U.S. Department of Agriculture

Alaine Hippee, a PhD student in the Integrated Biology (iBio) Graduate Program, received a 3-year, \$156,022, Predoctoral Fellowship from the U.S. Department of Agriculture National Institute of Food and Agriculture (NIFA) for her research on "Uncovering Impacts of Historical North American Crop

Domestication on the Origin of Pest Insects." With this grant, Hippee will study the evolutionary history of the Sunflower Maggot Fly and the agricultural history of its plant hosts, the Common Sunflower and the Jerusalem Artichoke, to determine how agricultural practices may influence the origin of new specialist insect species. Hippee is a member of the Forbes Lab in the Department of Biology. The NIFA Predoctoral Fellowship supports graduate education in agricultural-related disciplines and aims to cultivate future industry, government, or academic leaders who can solve emerging agricultural challenges of the 21st century.

CLAS Dissertation Writing Fellowship (Summer/Fall 2021)

Sydney Skuodas (Fassler Lab)

Graduate College Post-Comprehensive Research Fellowship (Spring or Fall 2021)

Camille Hanes** (Weiner/Dailey Labs)

Jinye Liang (He Lab)

Maria Valdes Michel* (Phillips Lab)

Ryan Pellow (Comeron Lab)

Kelley Withers (Cheng Lab)

2021 Walter R. Ingram Award for Superior Achievement in Functional Neuroanatomy

Emma Thornburg** (Summers Lab)

Jakobsen Student Conference

Krishna Madhav Nukala (Manak Lab) received honorable mention for a talk titled, "Connecting Epilepsy, Neurodegeneration and the Immune System" at the 2021 Jakobsen Student Conference held virtually on April 29, 2021.

Graduate College Summer Fellowship for Summer 2021

Richard Amara (formerly Bowman, Smolikove Lab)

Camille Hanes** (Weiner/Dailey Labs)

Anthony Lilienthal (Manak Lab)

Krishna Madhav Nukala (Manak Lab)

David Steffen (Weiner Lab)

Anna Ward (Forbes Lab)

Graduate College Diversity Fellowship (Fall 2021)

Sarah DeLong-Duhon (Forbes Lab)

2021 INI Kwak-Ferguson Fellowship

Ryan Betters** (Dailey Lab)

Graduate College Ballard and Seashore Dissertation Fellowship (Spring or Fall 2021)

Kimberly Bekas* (Phillips Lab)

Kailey Cash (formerly Harrell, Smolikove Lab)

Ben Gansemer (Green Lab)

Anthony Lilienthal (Manak Lab)

Stacey Peek** (Weiner Lab)

Anna Ward (Forbes Lab)

*Interdisciplinary Graduate Program in Genetics PhD student

**Interdisciplinary Graduate Program in Neuroscience PhD student



Undergraduate Scholarships and Awards



Linda and Rick Maxson Undergraduate Research Award

The Department of Biology is most grateful for Linda and Rick Maxson's philanthropy. Their contributions over the past two years have greatly enhanced the undergraduate research experience in Biology. Over 20 undergraduates received support to help defray the costs of supplies for their projects in individual faculty labs. The impact is clearly reflected by the diverse ages of the recipients, from freshmen to seniors, as well as the wider range of student backgrounds being hosted in faculty labs. The Maxson's have committed to continue and expand this program and their generosity will provide hands-on research experience that will inspire the next generation of life science researchers, teachers, and health professionals. Dr. Linda Maxson served as Dean of the University of Iowa College of Liberal Arts and Sciences for 15 years, stepping down from that position on June 30, 2012, when she joined the Department of Biology faculty. She officially retired on June 30, 2018.

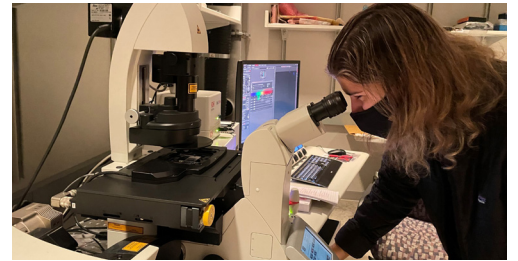


Photo of Elizabeth Martin

Department of Biology Undergraduate Awards

As a result of the generosity of our scholarship donors, the Department of Biology provided the following awards during the 2020 – 2021 academic year and summer 2021 (where indicated).

Arthur J. and Flora D. Levin Award for Outstanding Undergraduate Research

Cristina Garcia (Green Lab)
Jia Zhao (He Lab)

Arthur J. and Flora D. Levin Excellence in Undergraduate Teaching Award

Cristina Garcia (nominated by Professor Dan Eberl for Animal Behavior course in Fall 2020)

Avis Cone Undergraduate Research Fellowship

Robert Flanagan (Cheng Lab) – Summer 2021

Clifford W. Hesseltine Award for Academic Excellence

Alicia Smith

Evelyn Hart Watson Undergraduate Research Fellowship

Jackson Dunning (Neiman Lab) – Summer 2021
Bailey Goldberg (Forbes Lab) – Summer 2021

Lowden Prize for Outreach and Engagement in Biology

Andrew Wendel

*This scholarship is awarded through the College of Liberal Arts and Sciences.

Additional Awards Received by Students Affiliated with the Department of Biology

Summer 2021 Iowa Neuroscience Institute (INI) Scholars

Daniel Fu, Arshaq Saleem, Kartik Sivakumar

2021 Robert F. Ray Faculty Representative Award

Wren Renquist

2020-2021 Stevens Phi Beta Kappa Scholarship

Jennifer Cape

2021 U.S. Department of State Critical Language Scholarship

Aastha Chandra

2021 Rhodes Dunlap Collegiate Scholarship for Scholars in the Third Year

Hunter Brown (Eberl Lab)

Student-athletes named as 2020-21 Big Ten Conference Distinguished Scholars

Jennifer Cape* (Women's Soccer)
Ashleigh Jacobs (Women's Tennis)
Noah Scigliano* (Men's Gymnastics)
Allyson Steffensmeier* (Women's Gymnastics)

*Maintained a perfect 4.0 grade point average.

Iowa Center for Research by Undergraduates (ICRU) Research Fellowship

2020-2021

Kesten Anderson, Amanda Caraballo, Maria Carriel, Quinton Christensen, Heli Desai, Gabriel Gaudencio, Isabella Holland, Brianna Iverson, Haley Losh, Elizabeth Martin, Caity Owens, Joshua Peterson, Megan Schumer, Sydney Stork, Hanxi Tang, Andrew Wendel

Summer 2021

Kesten Anderson, Angela Cai, Kalynn Culver, Laura Evans, Noah Gilkes, Bailey Goldberg, Sean Michael Gomendoza, Madeleine Humpal-Pash, Brianna Iverson, Ashleigh Jacobs, Allysa Jones, Andrew Kain, David Keffala-Gerhard, David Kim, Jivan Koneru, Deeraj S. Manika, Pedro Marra, Pujit Mekala, Sophia Nopoulos, Alexis Oppman, Sydney Pearl, Amanda Qi, Grant Salvucci, Ruby Sanchez, Jack Smith, Dane Tow, Tuan Truong, Cally Tucker, Radha Velamuri, Rachael Volkman

2021-2022

Nicole Boodhoo, Jason Chen, Taylor DeMello, Jackson Dunning, Sam Eliassen, Noah Gilkes, Sean Michael Gomendoza, Elliana Gruhn, Madeleine Humpal-Pash, Brianna Iverson, Ashleigh Jacobs, Haley Losh, Deeraj S. Manika, Pedro Marra, Joshua Peterson, Amanda Qi, Cameron Williams

Congratulations 2020-21 Graduates!



The following undergraduate students graduated with honors in the major. Students who graduate with honors must fulfill the regular requirements for a Bachelor of Arts (BA) or Bachelor of Science (BS) degree and maintain a grade point average of at least 3.33 (overall and in the major). Students must also conduct research in the laboratory of a faculty member, write an honors thesis, and give a brief oral presentation of their research findings among other requirements.

Spring 2021 Undergraduate Honors Students

John Atagozli (Cameron Lab), B.S. in Biomedical Sciences
Rishika Avvari (Dunnwald Lab), B.S. in Biomedical Sciences
Vanessa Lazaro Camp (Yang Lab), B.S. in Biomedical Sciences
Quinton Christensen (Wu Lab), B.S. in Neuroscience
Nathan Cremers* (Freeman Lab), B.S. in Neuroscience,
Dustin Fykstra (Bassuk Lab), B.S. in Biomedical Sciences
Jacob Hansen (Bates Lab), B.S. in Biomedical Sciences
Nicole Hobson (Hultman Lab), B.S. in Biomedical Sciences
Dylan Mittauer (Grumbach Lab), B.S. in Biomedical Sciences
Anthony James Pamatmat (Bates Lab), B.S. in Biomedical Sciences

Abinaya Paravasthuresh (Neiman and Stipp Labs), B.S. in Biomedical Sciences
Megan Schumer (Demir-Lira Lab), B.S. in Neuroscience
Alicia Smith (Smolikove Lab), B.S. in Biology (Genetics and Biotechnology track)
Sydney Stork (Neiman Lab), B.S. in Biology (Genetics and Biotechnology track)
Cameron Williams (Smolikove Lab), B.S. in Biology (Cell and Developmental Biology track)
Jia Zhao (He Lab), B.S. in Biology (Genetics and Biotechnology track)

*Fall 2020

Integrated Biology (iBio) Graduate Program Master of Science (M.S.)

Tyler Atagozli (Fassler Lab), Summer 2021
Thesis: "Characterizing Nucleophosmin (Npm1) and heterologous aggregates in the budding yeast *S. cerevisiae*"
Carina Donne (Neiman Lab), Summer 2021
Thesis: "Comparing Life History Traits in Native vs. Invasive New Zealand Mud Snails"
Yishuo Jiang (Fassler Lab), Summer 2021
Thesis: "Phenotypic Characterization of the *Saccharomyces cerevisiae* Mediator Subunit Med15 in Fermentation and the Role of Glutamine Bias in Med15 Orthologs"
Shelley Lee (Dailey Lab), Spring 2021
Thesis: "The Role of Brain Macrophages in Hypertension Response Sensitization"
Adisa Salesevic (Slusarski Lab), Fall 2020, Non-thesis
Sofia Sheikh (Forbes Lab), Summer 2021
Thesis: "Cryptic diversity and evolution in a genus of oak gall associated parasitoids"
Qiudong Song (Neiman Lab), Fall 2020, Non-thesis
Benjamin Trendle (Logsdon/Forbes Labs), Fall 2020
Thesis: "Analyzing the Genome Evolution of an Asexual Wasp"

Integrated Biology (iBio) Graduate Program Doctor of Philosophy (Ph.D.)

Melinda (Lindy) Brastrom (Slusarski Lab), Fall 2020
Thesis: "A Tale of Two Organs: Dysregulation of *rbm24a* Leads to Microphthalmia and Cardiomyopathy in Zebrafish"
Kailey Cash (formerly Harrell, Smolikove Lab), Spring 2021
Thesis: "Recruitment and dynamics of DNA repair proteins at sites of complex DNA damage within the *Caenorhabditis elegans* germline"
David Cooper (Fassler Lab), Summer 2021
Thesis: "Functional and Potentially Adaptive Role of Polyglutamine in *S. cerevisiae* Med15"
Liping Liu (Malkova Lab), Summer 2021
Thesis: "A Challenging Journey for Break-Induced Replication Through Various Obstacles"
Beth Osia (Malkova Lab), Fall 2020
Thesis: "Sources and Signatures of Mutagenesis in Break-Induced Replication"
Joshua Thompson (Phillips Lab), Spring 2021
Thesis: "Centrosomal Regulation of the *C. elegans* Beta-catenin SYS-1 is Mediated by Microtubule Motors"

Interdisciplinary Ph.D. Graduate Programs

Adam Hefel (Smolikove Lab), Genetics Program, Spring 2021
Thesis: "RPA complexes and tool development for the study of DSB repair in the *Caenorhabditis elegans* germline"
Zachary Kockler (Malkova Lab), Genetics Program, Fall 2020
Thesis: "A unified alternative telomere lengthening pathway in yeast survivor cells"
Stacey Peek (Weiner Lab), Neuroscience Program, Summer 2021
Thesis: "Cellular and Molecular Mechanisms of Akirin2 Function in Maturing Neurons"
Nikale Pettie (Llopart Lab), Genetics Program, Spring 2021
Thesis: "Genomic and evolutionary studies of recombination rate variation in the sister species *Drosophila yakuba* and *D. santomea*"



Diversity Equity Inclusion

IOWA | Department of Biology

Biology DEI Committee Accomplishes Much During Inaugural Year

Established in July 2020, the Department of Biology Diversity, Equity, and Inclusion (DEI) Committee had many accomplishments during the Fall 2020 and Spring 2021 semesters. The committee's initial and critical tasks were to establish a diversity statement and an ongoing list of resources, which can be found on the department's website at biology.uiowa.edu/about/diversity-equity-and-inclusion.

Three subcommittees were also formed with their achievements summarized below and an additional subcommittee has been added focusing on DEI training and professional development for graduate student teaching assistants.

The DEI Climate Subcommittee conducted a department-wide climate survey during the Spring 2021 semester to identify strengths and weaknesses in relation to DEI. Faculty, staff, graduate students, and undergraduates were invited to participate. Action items will be identified from the resulting data.

The Resources and Education Subcommittee began publishing the Biology DEI Digest, a monthly compilation of upcoming DEI trainings and events, as well as featured resources from the Biology DEI Resources webpage. This Digest is sent to all Biology faculty, staff, graduate students, and undergraduate majors, and is archived on the Biology DEI resources webpage. A DEI graphic was also created (included on this page above).

Undergraduate DEI Committee members organized four subcommittees focusing on social media and outreach, peer mentoring, education, and research accessibility.

A DEI Book Club was also formed which included faculty, staff, graduate students, and undergraduates. Books read and discussed last year included *Superior and Inferior* by Angela Saini, and *How to be an Antiracist* by Ibram X. Kendi.

Membership on the DEI Committee is open to undergraduate and graduate students, faculty, staff, alumni and friends of the department. Alumni and friends interested in joining the committee should email biology@uiowa.edu. Meetings are currently being held monthly through Zoom.

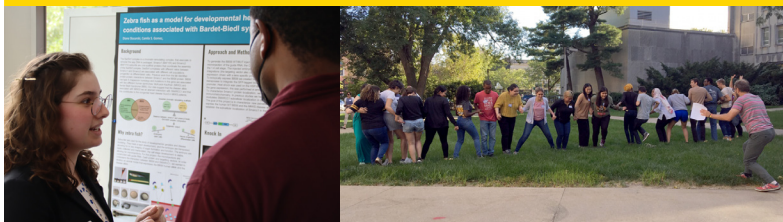
The **Iowa Biosciences Academy (IBA)** is a student development program that is administratively housed in the Department of Biology and directed by **Lori Adams**, Associate Professor of Instruction in Biology. The IBA program provides support for University of Iowa (UI) undergraduates who are underrepresented in the scientific research workforce, including those who identify as an underrepresented minority, from a disadvantaged background, and/or have a disability. Adams and **Tori Forbes**, Associate Professor of Chemistry, were awarded a five-year, \$1.9 million grant from the National Institutes of Health's (NIH) Maximizing Access to Research Careers (MARC) program to support the mission of IBA. The funds provide financial support for underrepresented UI junior and senior students to conduct year-round undergraduate research at the UI, coverage of up to 60% of tuition costs, and funds for student travel to present research at a national conference. This is an exciting phase for IBA to join the NIH MARC programs across the U.S. that are working to increase and support the diversity of researchers in the scientific workforce.

Adams, **Jan Fassler**, Professor of Biology, and **Bin He**, Assistant Professor of Biology, were also awarded an \$85,119 supplement grant from NIH to help students develop scientific coding skills, which are increasingly important in today's biology and biomedical research.

Dr. He, along with **Jinye Liang**, Integrated Biology graduate student, and **Lindsey Snyder**, Genetics graduate student, both members of the He Lab, organized a six-week "immersion" workshop for IBA students as well as other UI students, visiting summer students, and local K-12 students and teachers with little or no computational background. The workshop was free to all participants and attracted 52 students, 14 from high school levels, including one science teacher. Participants learned programming languages Python or R in a team-setting. Surveys showed that many of the students improved their coding skills and gained confidence in using computers to solve biological problems.

Dr. Fassler also used funds from the grant to facilitate the introduction of data science modules to an existing introductory Bioinformatics course at the University of Iowa. These modules were implemented for the first time in the Fall 2021 semester and will help students gain the qualifications and ambitions necessary to pursue careers involving the analysis of biomedical datasets that are central to the future of health and medicine in today's challenging environment.

The IBA program was founded at the University of Iowa in 1999 and is supported by the Office of the Vice President for Research, Graduate College, College of Liberal Arts and Sciences, and the Office of the Executive Vice President and Provost. For more information, visit iba.biology.uiowa.edu.



IOWA

Department of Biology

143 Biology Building

Iowa City, IA 52242-1324

Summer Research in Evolutionary Science

Ten students from universities and colleges across the country spent ten weeks of their summer in 2021 on the UI campus researching evolutionary science as part of the National Science Foundation's (NSF) Research Experiences for Undergraduates (REU) – a summer research training program for undergraduate students. The focus of this REU is to provide students with research experiences across several disciplines in evolutionary science. Three UI academic departments – Biology, Anthropology, and Earth and Environmental Sciences – offered research projects spanning a range of topics including the evolution of behavior, the origin of species, the evolution of



animal development, the evolution of sex, morphological change during animal domestication, and the evolution of stress responses. As part of the program, students received training in research best practices, participated in career workshops, and created digital poster presentations based on their research. The students also collaborated with the University of Iowa Museum of Natural History and the Office of Sustainability and the Environment to host a public “BioBlitz” at the prairie restoration at the UI Ashton Cross Country Course. Housing, travel and meal allowances, and a stipend of \$6,000 were provided to all participating students. This was the 2nd year of a 3-year grant in the amount of \$383,770 from NSF. **Andrew Forbes**, Associate Professor of Biology, and **Maurine Neiman**, Professor of Biology, are the program organizers. For more information, visit biology.uiowa.edu/reu.

Private funding is critical for our department's continued success as we seek to support student research, invest in state-of-the-art equipment, fund seminar series and lectureships, and attract and retain outstanding faculty members. To learn how monetary gifts can make a difference, please visit www.givetoioowa.org/biology or contact Jessica Mattes at the UI Center for Advancement.

Jessica.Mattes@foriowa.org, 319-467-3533. We appreciate your support!