

BIOLOGY HONORS RECEPTION

2025



FRIDAY, MAY 16, 2025



Biological Sciences
University of Missouri

DEPARTMENTAL HONORS

Graduates earning Departmental Honors have completed a research project carried out over a period of at least two semesters under the supervision of a life sciences faculty member at MU and have presented their research results at a public forum or in the form of a scientific research paper, while also maintaining a cumulative GPA of at least 3.30.

Students who have earned Departmental Honors in Biological Sciences have contributed to scientific understanding and obtained a much deeper understanding of a particular area of biology and its scientific study than is possible through conventional course work.

Achievement of this honor is recognized in the following ways:

- Completion of Departmental Honors is noted on a student's transcript and diploma.
- The student receives a gold honors cord to wear during commencement.
- The student receives an Honors Certificate from the Division of Biological Sciences.

MOHAMMED ABU-SALAH

Examining disease in BEFL+/E396K and NEFLE396K/E396K mouse models of CMT2E

Mentor: Dr. Chris Lorson, Professor of Veterinary Pathobiology, Associate Vice Chancellor of Research, Associate Dean of Research for Veterinary Medicine

KATHERINE BAILEY

Investigating the effects of co-chaperones on the Hsp70 dependent ubiquitination of Tau

Mentor: Dr. Stephanie Gates, Assistant Professor of Biochemistry

KENDALL BARNES

Lipocalin 2 (NGAL) and lactotransferrin's LTF effect on inducing mesenchymal-to-epithelial transition (MET) *in vitro*

Mentor: Dr. Amanda L. Patterson, Assistant Professor of Animal Sciences

JAMIE BAUMANN

Investigating differential phenotypes between maternal and paternal inheritance of presenilin mutation

Mentor: Dr. Elizabeth King, Associate Professor of Biological Sciences

JONATHAN BENSON

Development of machine learning approaches for image analysis in Duchenne muscular dystrophy research

Mentor: Dr. Dongsheng Duan, Curators Distinguished Professor of Molecular Microbiology and Immunology

VICTOR CHEN

Anatomical distribution of cardiac vagal motor neurons in the DMV

Mentor: Dr. Carie Boychuk, Associate Professor of Veterinary Medicine

SHARON FEARS

The effect of acute sleep restriction in cerebrovascular reactivity to carbon dioxide in healthy humans

Mentor: Dr. Jacqueline Limberg, Associate Professor of Nutrition & Exercise Physiology

KAMERON HAHN

Trophoblast energy metabolism: implications for placental complications

Mentor: Dr. Laura Schulz, Associate Professor of Obstetrics, Gynecology, and Women's Health

KATHLEEN HARRIS

Relationship between patient reported outcomes and the protein content of infrapatellar fat pad tissue from osteoarthritic knees

Mentor: Dr. Aaron Stoker, Professor of Orthopaedic Surgery

GABRIELA IONITA

Strontium isotope analysis of animal remains from archaeological contexts in Southwest US

Mentor: Dr. Virginie Renson, Instrument Scientist, MU Research Reactor

GABRIEL KEETON

Effect of osteoarthritic cartilage biomechanical and structural properties on tissue protein content

Mentor: Dr. Aaron Stoker, Professor of Orthopaedic Surgery

RUCHA KELKAR

Swallowing Related quality of life in head and neck cancer patients post treatment

Mentor: Dr. Stephanie Knollhoff, Assistant Professor, Speech, Language and Hearing Sciences

LUAN LE

Tapered fitness of thymic IL-4 handicaps negative T-cell selection in NOD mice

Mentor: Dr. Habib Zaghouani, Professor of Molecular Microbiology and Immunology, J. Lavenia Edwards Chair in Pediatrics

SAMUEL MARTIN

Impact of adiposity on vascular adrenergic receptor sensitivity in young males and females

Mentor: Dr. Jacqueline Limberg, Associate Professor of Food, Nutrition, and Exercise Physiology

LUKE MARX

Effect of anatomic location on the metabolic responses of osteoarthritic cartilage to compressive load

Mentor: Dr. Aaron Stoker, Professor of Orthopaedic Surgery

ELIJAH MASKROD

Does vagal nerve stimulation improve airway protection in a rat model of laryngeal nerve injury?

Mentor: Dr. Teresa E. Lever, Professor of Otolaryngology

THOMAS NICKEL

Epigenetic aging of the liver due to direct and ancestral exposure to bisphenol A

Mentor: Dr. Ramji Bhandari, Associate Professor of Biological Sciences

KEITH NYANYO

Right ventricular phenotype in a mouse model of type 3 pulmonary hypertension

Mentor: Dr. Timothy L. Domeier, Associate Professor of Medical Pharmacology/Physiology

BRENNAN RUMPF

Impacts of metabolic mutations on antibiotic stress response in *Staphylococcus aureus*

Mentor: Dr. Caroline Grunenwald, Assistant Professor of Biological Sciences

CARLOS SARDINA

Sex differences in volunteer wheel running and environmental enrichment on high fat intake

Mentor: Dr. Matthew Will, Associate Professor of Psychological Sciences

KAREEM SHAHEEN

Fecal microbiome transplantation from stroke donors promotes Alzheimer's disease brain pathology in 3Tg-AD mice

Mentor: Dr. Ai-Ling Lin, Professor of Biological Sciences and Radiology

ELIJAH SIDIROPOULOS

From neurogenesis to oogenesis: investigating neural protein's role in *Drosophila* oocytes

Mentor: Dr. Dan Bergstralh, Associate Professor of Biological Sciences

JOEY TURNER

Plant metabolite modifiers of LSD1: Could they be used for therapeutic purposes?

Mentor: Dr. Bill Folk, Professor of Biochemistry

LEAH WHITLEY

The effect of reduced maternal myostatin on trophoblast cell invasion

Mentor: Dr. Laura Schulz, Associate Professor of Obstetrics, Gynecology, and Women's Health

Fall 2024 Graduates

KAYLA BURKLE

Mentor: Dr. Victoria Vieira-Potter, Associate Professor of Nutrition & Exercise Physiology

CAROLINE JENKINS

Mentor: Dr. Amanda Patterson, Assistant Professor of Reproductive Biology

HAMZA KDESCH

Mentor: Dr. Huang Hu, Assistant Professor of Ophthalmology

ELLA ORLANDO

Mentor: Dr. Lei Lei, Associate Professor of Obstetrics, Gynecology and Women's Health

LILLIAN PORTER

Mentor: Dr. Casey Holliday, Associate Professor of Pathology and Anatomical Sciences

EMILEE REINHOLD

Mentor: Dr. Allison Roth, Assistant Professor of Biological Sciences

GRACE SMITH

Mentor: Dr. Rene Cortese, Assistant Professor of Child Health and Obstetrics, Gynecology, and Women's Health

Outstanding Senior Scholar Awards in Biological Sciences

Recognizes students who have a prolonged track-record of engagement in biology-related activities beyond the classroom. The award is open to students graduating in the fall, spring, or summer semester of the current academic year. This year's awards are funded by the John I. Hardy Outstanding Undergraduate Scholar Award Endowment, established by Thora Hardy in memory of John I. Hardy.



MOHAMMED ABU-SALAH

Mohammed's enduring drive to help others stems from a passion for merging science with impact. As a McNair Scholar, he conducted research on critical human diseases, such as Charcot-Marie-Tooth, Alzheimer's, and stroke—resulting in peer-reviewed publications and national presentations, including at a Stanford research conference. Beyond the lab, Mohammed has led initiatives to uplift others, serving as president of Mizzou's Pre-Medical Society, founding the Magical Moments Foundation to support children with facial differences, and launching Mizzou Mental Health Week to advocate for student wellness. "Biology didn't just prepare me for medicine—it made me choose it," Mohammed reflects.



CHLOE VELCHECK

Chloe's undergraduate experience reflects a consistent dedication to understanding and impacting human well-being across diverse domains. Her research in Dr. Mary Beth Miller's Health Intervention & Treatment Research Lab has addressed critical areas of addiction, sleep disorders, and PTSD involved in general population and veteran health issues. She engages in mentorship by serving as a peer learning assistant for incoming freshmen and as a teaching assistant. Her commitment to service extends to public health through her founding and leadership of MU's chapter of Doctors Without Borders, as well as her work as a health advocacy intern at the City of Refuge and a hospice volunteer. This breadth of experience has provided her an exceptional foundation for medical school.

DEPARTMENTAL AWARDS

Grateful alumni as well as the families and friends of our former students and faculty have established a number of awards to recognize outstanding achievement by our students. The Division views all the awards as equivalent in prestige and honor. Recipients typically excel in the classroom, in research, and with campus extracurricular activities.

Outstanding Senior Research Awards in Biological Sciences

Recognizes students who have excelled as undergraduate researchers, as evidenced by presentations and/or publications, while maintaining a high level of academic achievement in rigorous STEM courses. This year's awards are funded by the **Mary Margaret McCarty Scholarship Endowment**, the **Clarence Clinton Crouch Outstanding Undergraduate Scholar Endowment**, and the **Nahm Sisters Endowment Fund**.



DELANEY CANNON

Delaney has pursued an independent research project in the neurobiology lab of Dr. Joseph Santin since her sophomore year. Her investigation into how environmental changes impact the regulatory systems of neural circuits has yielded novel insights into the mechanisms neurons use to stabilize their activity. Her work was recently published in *Current Biology*. She presented her findings at the American Physiological Summit/Society in 2024 and 2025, and her accomplishments have been recognized with the two awards from the American Physiology Society. Delaney credits her research experience with solidifying her aspiration to pursue an MD-PhD and a career as a physician-scientist specializing in neurology.



KAMERON HAHN

For four years in Dr. Laura Schulz's lab, Kameron has investigated the energy metabolism of extravillous trophoblasts, a critical placental cell type, and its role in pregnancy complications including early-onset preeclampsia. He expanded his research horizons by completing summer internships in Germany and at the KU Medical Center, where he contributed to research projects focused on colorectal and lung fibrosis, respectively. He has demonstrated his commitment to mentoring as an Undergraduate Research Ambassador for the Office of Undergraduate Research. The fundamental science skills he has honed through his research experiences, particularly in the context of real-world medical challenges, will be invaluable in his pursuit of a career as a physician.



LUKE MARX

Luke has been an integral member of the Osteoarthritic Metabolism Team at the Thompson Lab for Regenerative Orthopaedics for four years. His projects have investigated the relationships between clinically significant protein biomarkers in the osteoarthritic knee and the histological deterioration observed during the advancement of osteoarthritis. Luke presented his findings at the national Orthopaedic Research Society's Annual Meeting in 2024 and 2025. Luke has served as Secretary of the Thompson Lab's Student Association and as an Undergraduate Research Ambassador for the Office of Undergraduate Research. The robust scientific skills Luke has acquired have positioned him well for medical school and his future career as a physician.

Blackburn-Heseman Award

Recognizes rising sophomores, juniors, or seniors majoring in Biological Sciences, with financial need, who have plan to pursue a career in the life sciences or medicine and have a cumulative GPA of 3.0 or greater. This award is made available by an endowment established by Dr. Jan Weaver and Dr. James Carrel in honor of Frances M. Blackburn and Wilhelmina Heseman.



NOURHAN BALBOULA

Shaped by a life lived across continents, Nourhan brings a unique and informed perspective to her enduring interest in biology and its application in medicine. Her first significant research experience came as a freshman in an Honors Introduction to STEM Research class. In the class, she isolated a soil bacterium and investigated its antibiotic capabilities, giving her the opportunity to use the scientific process to address a global health challenge. Beyond the classroom, Nourhan actively engages with the local community by volunteering at the Columbia Urgent Care and with the American Red Cross, demonstrating her compassion for others and commitment to medicine.



SOPHIE HOF

Sophie is a freshman majoring in Biological Sciences with a minor in Music. Her interest in science started in high school and grew through the Freshman Research in Plants program, which connected her with Dr. Ron Mittler's lab. There, she works on multiple projects involving cancer research using cell-penetrating peptides and how Arabidopsis plants respond to reactive stress. Outside the lab, Sophie plays cello in Mizzou's Philharmonic Orchestra and enjoys sharing music at local senior homes and community events. She's also a member of Tri-Beta, the biology honors society, and is preparing for a summer internship as an Animal Care Specialist at the Sobela Aquarium in Kansas City.



KEITH NYANYO

Keith's undergraduate journey at Mizzou has been marked by deep engagement with the campus. As a MARC/IMSD Fellow, he conducted electrophysiology research investigating cardiac disease models, specifically analyzing the morphological and physiological changes in fibrotic tissue associated with hypertension. He actively engages in Pathways to Success, the African Students' Organization, Mizzou Strength Club, PreMed Society, and Mizzouthon. As a biology peer advisor, Keith shares his wealth of experiences and insights with first-year students. Eager to leverage his comprehensive Mizzou journey, Keith aims to develop innovative solutions to critical biological or medical challenges either by attending medical school or graduate school.

Professor Stanley Zimmering Prize in Biology

Recognizes undergraduate or Masters students who have excelled in research, while maintaining a high level of academic achievement in STEM courses, and have been accepted into a PhD program in the life sciences. The prize is funded by the **Jonathan Marc Zimmering and Stanley Zimmering Endowment**.



ELLIETT BACA

Recruited to Mizzou as a Post-baccalaureate Research Education Program scholar, Eliett trained with Dr. Elizabeth King in advanced genomic and quantitative techniques. She applied these methods to investigate the evolutionary dynamics of diet on the gene activity of a crucial signaling pathway in fruit flies. She transitioned into the Division's M.S. program last Fall and will complete her thesis, which delves into a crucial mutation within this pathway that is responsible for activating downstream genes that govern physiological responses to nutrient availability. Eliett has presented her findings at the prestigious Allied Genetics Conference. Continuing her research trajectory, she will start her Ph.D. this fall with the King lab.



OLIVIA LESNIK

Olivia's passion for research was ignited during a study abroad experience at the Karolinska Institute in Stockholm, Sweden. There, she was exposed to the excitement of neuroscience research while gaining invaluable hands-on experience performing immunofluorescence on human brain tissues from patients with Alzheimer's, Parkinson's, and frontotemporal dementia. Upon her return, Olivia joined the laboratory of Dr. Laxman Gangwani. There, she has contributed to projects focused on Alzheimer's disease-related dementia and amyotrophic lateral sclerosis 4. She recently presented her work at the Neurological Disorders Summit in Frankfurt, Germany. She will matriculate into the Pathobiology Area Ph.D. program at Mizzou this Fall.

UNDERGRADUATE AFFAIRS COMMITTEE

The Division appreciates the hard work, commitment, and engagement of its Undergraduate Affairs Committee members, who coordinate undergraduate research, honors, and awards: **Dr. Nick Blay, Dr. Pamela Brown, Ms. Elise Buchert, Dr. Amanda Durbak, and Dr. Enoch Ng'oma.**

Tri Beta Honor Society

Beta Beta Beta (TriBeta) is an honor society for students, particularly undergraduates, dedicated to improving the understanding and appreciation of biological study and extending boundaries of human knowledge through scientific research.

2025 INDUCTEES

Vishvi Aurora
Haleigh Dahl
Breeyn Garrett
Autumn Gavlin
Kameron Hahn
Hannah Holmes
Gabriela Ionita
Zach Lease
Kayli Lightner
Madison Linck
Mya Long
Bridget Lorson
Zoë Malik
Madelynn Murphy
Mirra Ramakrishnan
Kelly Rockford
Sydney Slomski
Joey Turner
Chloe Velcheck
Maanasa Vollar
Ann Walters
Jenna Woelfel

PEER ADVISORS

Peer Advisors are an integral part of the Division of Biological Sciences. As mentors to incoming first-year students, they provide a variety of strategies for academic success and direct students to campus resources. In so doing, they provide a valuable student-perspective on the Mizzou experience and help smooth the transition for incoming students.

Breeyn Garrett

2023-2025



Madelynn Murphy

2023-2025



Keith Nyanyo

2024-2025



Support Future Scholars.

The generous contributions from our departmental alumni and community ensure we can continue providing fellowships and awards for our students.

Even a modest gift of \$25 will help enable the department to host meaningful events, such as this one, that celebrate and recognize the hard work and achievements of our students.



To discuss how a more significant gift can align with your passions and create lasting impact, please contact Dr. David Schulz, Director of the Division of Biological Sciences, to schedule a conversation.



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