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Animal Behavior Bulletin

2023

Dear Animal Behavior Community,

This year's Bulletin is full of examples of our energetic students, committed faculty and staff, and diverse and successful programs. I'm so glad to be part of this community, and honored that you've entrusted the directorship to me for the past several years.

Our graduate students are integral to CISAB's mission. In this issue, we congratulate the CISAB students who recently completed PhDs, as well as our CISAB fellowship recipients. CISAB graduate students and postdocs organized our 30th Animal Behavior Conference, which provided a wonderful opportunity for undergraduates, graduate students, and postdocs to present their research. We were especially pleased to host plenary speaker and 2023 Exemplar Awardee Vanessa Ezenwa, and we thank CISAB faculty member Justin Wood for his keynote talk.

The undergraduate major is thriving: with 130 students, Animal Behavior is the eighteenth largest major in the College. Our undergraduates continue to seek out new learning experiences tailored to their interests through internships and summer research, honors thesis research, and more. We're so proud of our energetic, committed, and intellectually engaged students, and thrilled to be able to support some of their efforts through our Summer Scholarship Program and the Alex Black Memorial Scholarship.

Directed by Laura Hurley, ten undergraduates from across the U.S. participated in our NSF-funded Research Experiences for Undergraduates, and five REU alums presented their work at the Animal Behavior Conference. And congratulations to the training faculty of the Common Themes in Reproductive Diversity training grant! The NIH-funded training grant, led by Dale Sengelaub and Laura Hurley, received a perfect score on review, and was renewed for another 5 years. With four new predoctoral trainees and two postdoctoral fellows, the training grant continues to provide a venue for fertile exchange of research ideas.

Animal Behavior/CISAB thrives on the strength of its engaged faculty and student members, both past and present. Thank you for your continued support!

Paul



Congratulations: Training Grant Renewed!

Common Themes in Reproductive Diversity Training Grant

From Dale Sengelaub



Understanding the sexual phenotype, or gender, has far-reaching implications for human health and well-being. In 2005, in collaboration with colleagues across a variety of disciplines, both within and outside of CISAB, we established a highly successful, NIH-funded training program, “Common Themes in Reproductive Diversity” (CTRD). This unique training program was recently renewed by the NIH (May 2023) for another five years.

Our group includes 20 training faculty and five affiliated faculty belonging to nine units that award PhDs: the Departments of Anthropology, Biology, Intelligent Systems Engineering, Epidemiology and Biostatistics, Psychological and Brain Sciences, and Gender Studies, as well as the Programs in Cognitive Science, Medical Sciences and in Neuroscience. Other essential participants in the training group include The Kinsey Institute, the Center for Genomics and Bioinformatics, and the Animal Behavior Program. Collectively, this multidisciplinary, integrative approach combines diverse perspectives, disciplines, and experimental approaches. To date, the CTRD has supported 60 predoctoral and 15 postdoctoral trainees.

The CTRD supports research questions like: How do social stressors affect the genome and influence the balance between adaptive and maladaptive strategies of sociality or parenting in males vs. females? How does maternal antibiotic treatment affect offspring development, and what mechanisms make these carryover effects sex-specific? How do sex differences in immune responses bring about sex differences in health and disease? Our trainees and faculty specialize in sex steroid hormones, maternal stress, changing environments, maternal and infant health, and healthy sexual behavior. We use human, non-human model systems, and evolutionarily diverse non-model systems, which have led to – and will continue to lead to – key insights on basic mechanisms of reproduction and development, on fundamental differences among the sexes, and on the manner in which these issues of sex and reproduction shape illness and health outcomes. New knowledge generated under this award will be valuable to policy makers, medical research, and health care, as well as future translational efforts. This training grant has at its core the NIH mission to address sex as a biological variable across wide range of human and non-human animal models.



Congratulations CISAB and CTRD Fellowship Recipients

CISAB Fellowship Recipients 2023-2024



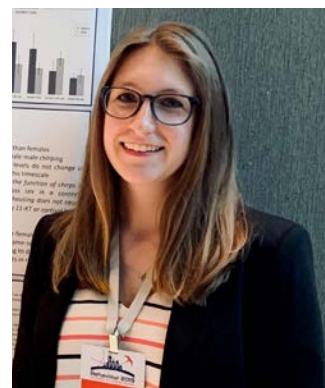
Sierra McAlister
Hurley Lab



Tyler Nighswander
Hunt Lab



Cassandra Sheridan
Crystal Lab



Megan Freiler
Smith Lab

CTRD Predoctoral Fellows 2023-2024



Erica Nadolski
Mozcek Lab



Ellie Shell
Ledon-Rettig Lab



Jessica Rose Short
Barber Lab



Nicole Stark
Hardy Lab

CTRD Postdoctoral Fellows 2023-2024



Rebecca Westwick
Moczek Lab



Isaac Miller-Crews
Rosvall Lab
Hahn Lab

Congratulations ABEH Graduates

In May, Animal Behavior hosted a reception for our graduating seniors.



2023 Graduates

Rachel Albright
Miranda Anderson
Arianna Buehler
Mars Bollnow
Ty Bothwell
Sarah Buschman
Taylor Crocker
Chase Cummings
Tracie Daniel
Karlyn Doty
Mya Fayyaz
Shellee Goodman
Makayla Guerra
Diego Guerrero

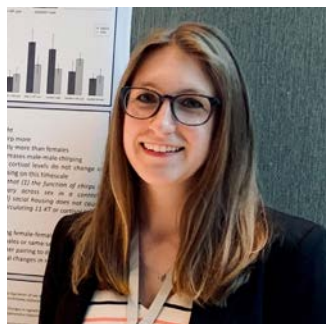
Dylan Haseman
Alyssa Highberg
Gray Hite
Yamato Kume
Rachelle Lange



Anissa Liphford
Abby Lourdraj
Alex Martindale
Kate Millar
Brittni Pemberton
Esperanza Rodriguez
Estrella Rodriguez
Sabrina Simms
Katie Sperka
Emma Van Prooyen
Addison Villaneda
Quinton Wade
Kaleb Waikel
Natalie Winters

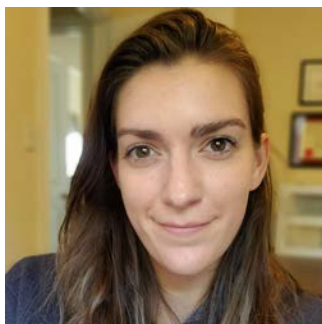
Congratulations CISAB Members

PhDs Awarded to CISAB Graduate Students 2023



Dr. Megan Freiler *Smith Lab*

SOCIAL ENVIRONMENT MODULATES THE FUNCTION AND NEUROENDOCRINE REGULATION OF ELECTROCOMMUNICATION SIGNALS ACROSS OF APTERONOTID FISHES



Dr. Mary Woodruff *Rosvall Lab*

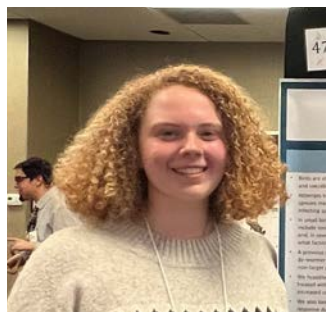
THE MECHANISMS OF HEAT TOLERANCE IN A WILD BIRD: AN EXPERIMENTAL AND COMPARATIVE APPROACH



Dr. Tessa Steiniche *Wasserman Lab*

EVOLUTIONARY TOXICOLOGY IN WILD PRIMATES

Goldwater Nominee: Animal Behavior Major Ariel Tysver



The Goldwater Scholarship Program is one of the oldest and most prestigious national scholarships for the natural sciences, engineering, and mathematics. It offers financial support, based upon merit and need, and encouragement to sophomores and juniors studying those fields. The scholarship supports their research as they prepare for advanced degrees and careers in related fields.

Animal Behavior major Ariel Tysver is a nominee for the Goldwater Scholarship. Ariel has been laying the groundwork for her future by working with Neuroscience, the Animal Behavior Program, and the Midwest Center for Biodiversity, led by Dr. Ellen Ketterson. She has been researching potentially negative human-animal interactions in the natural world as they relate to disease ecology.

Ariel's research is laying the foundation for her aspirations to pursue a dual degree program combining a D.V.M and Ph.D. in Biological Sciences or Ecology. With these degrees, she plans to become a veterinary scientist and conduct wildlife conservation-based research that will examine medical interventions that could diminish the adverse effects of zoonotic diseases on humans and natural populations.

Congratulations CISAB Faculty

Midwest Center for Biodiversity at IU launched at Kent Farm



Dr. Ellen Ketterson, a founding member of the Center for the Integrative Study of Animal Behavior, has joined with Dr. Alex Jahn to launch the Midwest Center for Biodiversity.

In a rapidly changing climate, the newly launched Midwest Center for Biodiversity, within the College of Arts and Sciences at Indiana University Bloomington, is the first center dedicated to studying why the Midwest is losing biodiversity. The center will recommend solutions in conservation practice and policy, and increase awareness of the urgent response needed to stop this loss.

AAAS Fellow Dr. Curt Lively



Congratulations to Curt Lively, who in 2023 became a Fellow in the evolution and ecology section of biological sciences of the American Academy of Arts and Sciences, one of the oldest and most prestigious honorary societies in the United States. Curt is a Distinguished Professor in the College of Arts and Sciences' Department of Biology.

Curt has studied the possible advantages of cross-fertilization and the production of genetically diverse offspring. The Lively Lab also studies topics in evolutionary and behavioral ecology, including host-parasite coevolution, mate choice and the evolution of parasite virulence.

He received the Indiana University Trustees' Award for Outstanding Teaching in 2002 and 2011 and was elected an honorary fellow of the Royal Society of New Zealand in 2007.

Welcome to Animal Behavior



Dr. Lisa Barrett

This year, we were happy to welcome Dr. Lisa Barrett to her new position as Lecturer in the Animal Behavior Program. Lisa completed her PhD in Zoology and Physiology at the University of Wyoming, where she studied personality, problem solving, and social learning in elephants and zebra finches before completing postdocs at the Oklahoma Zoo and the San Diego Wildlife Alliance. We look forward to working with her to expand our undergraduate course offerings in interesting directions as we continue to improve and grow the program.

Animal Behavior Course Feature

BIOL-Z460 Animal Behavior is a core course in Animal Behavior. In Dr. Kim Rosvall's course, a key course objective is to practice the scientific method: pose a hypothesis, design an experiment to test the hypothesis, and explain a prediction with a graph, accomplished over the course of the semester via in-class group work and lively discussions. These exercises foster critical thinking skills that will help students in any career. The capstone in Kim's class is completion of a proposal on an original research question, which students present at a poster session in the last week of class (see below). To complete the proposal, students learn how to objectively describe and quantify behavior; search and critique the primary literature; and generate hypotheses and predictions. Students can choose from a list of starter ideas or develop a new idea based on their own internship or research experiences. Kim and her TA provide feedback on drafts of the proposal, and students are peer judges at the final poster session. For an authentic conference experience, Kim recruits faculty, postdoc, and grad student judges as well. Through this assignment, students learn to critique information, evaluate sources, and come up with original ideas. They also have fun, and get to follow their interests during project-based learning.



Animal Behavior Outreach

Spending the Day with the Wild Nature Project Program

In October, Animal Behavior folks spent a day doing outreach at The Wild Nature Project's forest school program for home schoolers. We focused on bird migration, opening the day with a group game to gauge participants' knowledge about birds. Next, the volunteers led the group in making paper airplanes shaped like birds to use during our popular bird migration game, which teaches kids about the many challenges a bird faces when migrating. Afterwards, the children participated in a nature scavenger hunt. We ended the day sitting in a circle, reviewing local birds and discussing what we had learned. It was such a fun day!

Many thanks to Outreach Coordinator Charli Taylor and graduate student volunteers Atalanta Ritter, Josie Fornara, and Cassandra Sheridan!



Top row, left to right: ABEH Volunteers helping Wild Nature Project children make bird airplanes for the migration game; Atalanta leads a discussion of bird identification.

Bottom row, left to right: Wild Nature Project participant wears a cardinal mask and shows her bird plane for the migration game and nature scavenger hunt list; children playing the bird migration game.



Animal Behavior Outreach

SCIENCE FEST

ECLIPSE EDITION

Are you ready FOR totality?

SATURDAY, APRIL 6, 2024

DATE
CHANGE!

9AM-3PM • BLOOMINGTON, IN

2023 Alex Black Memorial Scholarship

Mya Fayyaz Interned with the Sycamore Land Trust, Bloomington, IN



The Land Steward Internship at the Sycamore Land Trust taught me that it doesn't matter where you come from or what you do, it's about taking initiative and finding that spark that lights up your interests. I always thought my major defined my career and that's not the case at all. Meeting a diverse team of experts with a range of skillsets allowed me to understand what kind of specific experience I would need for my field. I was amazed by all the unique specializations people had.

The people I worked with were so kind and willing to share their knowledge. It was immediately clear that I needed to know scientific terms that I hadn't learned yet. By the end of the internship, I could tell you which plants were invasive, and which were native off the top of my head. I could listen to a bird call and tell you which species of bird was singing. I could also tell you the scientific name of any plant we passed on the local trails. The hands-on learning in this internship was such an important addition to my classroom experience!

I found a little thrill in finding a yellow box turtle in the garden where I was planting, and when we found a beaver dam in the woods filled with baby pups. It felt good to clear out fallen trees on a trail after a storm to keep the public safe. Most of all, it was rewarding to find a mentor that wants me to succeed. After this internship, I can happily say I have the confidence that I can be the animal conservationist I've always wanted to become.

Peyton Hutchinson Interned with Verdiazul, Junquillal, Costa Rica



It was an honor to accept the Alex Black Memorial Scholarship. I could not have gone to Costa Rica and fulfilled my childhood dream of working with sea turtles without it. I worked for a program called Verdiazul, in Junquillal, Costa Rica. Verdiazul's mission is to protect sea turtles and their environment. We worked to create a better place for the turtles and to increase their chances of survival. As Verdiazul, we actively work to keep the beaches clean, plant mangroves (as they are a vital part of the ecosystem and serve as shade on the beaches for optimal nesting), protect the hatchery, patrol the beaches for nests (so we can take them to the hatchery to protect them), and educate the public through talking about our mission and all things turtles.

I have learned so much about myself and have so many crazy stories to go along with it. I made so many life-long friends, both volunteers and staff members. It was so awesome to be a part of such a beautiful program and great cause. I was able to achieve a dream!

Internship News

Hayley Wilson interned with WildCare Inc., Bloomington, IN

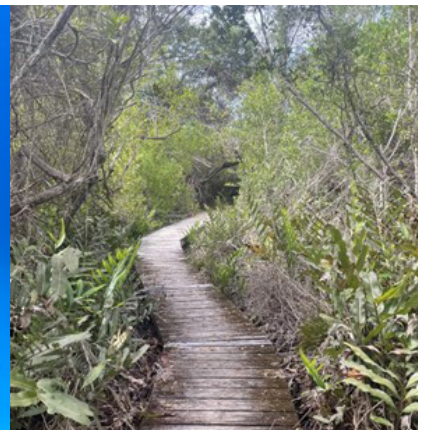


My experience at WildCare was absolutely amazing! I thought I had some idea of what caring for wildlife would be, but boy, was I wrong! At WildCare, I learned proper handling techniques for a variety of wildlife—skunks, opossums, hawks, rabbits, bats, and more. Moreso, I learned how to assess incoming, injured wildlife and the procedure that follows, such as wound cleaning and dressing and even injecting subcutaneous fluids. However, my absolute most favorite part of this experience as an intern at WildCare is seeing these animals be nursed back to health and released back into the wild. There is nothing quite like knowing that I made a difference in the lives of the animals that I worked with, especially those under my care that were released. Furthermore, I met some great

people, all of whom are fueled by their passion for native wildlife. I got sprayed by a skunk . . . not once, but twice—yes, you read that correctly and yes, I smelled horrible. But, even with that, this experience is something that I will never forget! If you get the chance to volunteer and/or intern there, please do! You won't regret it!

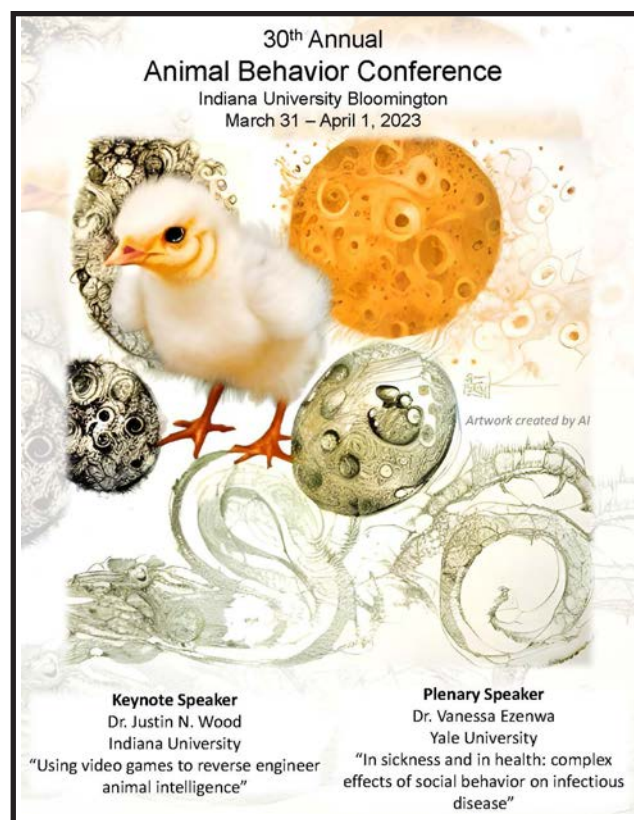
Londyn Riley Studied Abroad in the Grand Caymans

Last summer, I completed BIOL-L 433 Tropical Biology in the Grand Cayman Island and it was amazing--a literal dream come true! I had the most amazing experiences and made wonderful friendships while also earning my Scuba certification. I learned so much and got to see things I only ever imagined in my dreams. The people there were extremely friendly and always helpful. Exploring the island above and below the water was spectacular. We observed and learned about stingrays, sea turtles, jellyfish, sharks, crabs, sea slugs, sea cucumbers, coral reefs, all kinds of fish, and so much more under the sea! On the land we learned about the biology of giant agave plants, beautiful tropical flowers, iguanas, birds, and wild pigs. I had such a blast exploring this island and discovering new things every day! I am so grateful for this experience and it's something I will never forget!



2023 Animal Behavior Conference

The 30th annual IU Animal Behavior Conference brought together animal behaviorists from across the country, with nearly 190 people from 29 institutions across eight states (and Poland!). We were thrilled to welcome back alumni of both our undergraduate and our graduate programs, as well as previous interns in our summer REU program. It was especially gratifying to see former PhD students bring their undergraduates with them. In addition to the many contributed talks and posters by students and postdocs, we enjoyed a wonderful plenary talk on the influence of social behaviors on immunity and disease by this year's Exemplar Award winner Dr. Vanessa Ezenwa. IU Associate Professor and CISAB member Justin Wood treated us to a fascinating talk on reverse engineering animal intelligence.



Cover designed by Michelle Benavidez

CISAB Exemplar Award 2023: Vanessa Ezenwa

Dr. Vanessa Ezenwa earned a B.A. at Rice University and a Ph.D. at Princeton University before completing a postdoc at the United States Geological Survey. Her first faculty position was at the University of Montana, before moving to University of Georgia in 2010. Dr. Ezenwa is currently a Professor in the Department of Ecology and Evolutionary Biology at Yale University.

Dr. Ezenwa's work combines theory, field studies, and behavioral approaches with molecular and immunological techniques to investigate how behavioral, physiological, and ecological processes at the individual level shape interactions between hosts and their parasites, and the consequences for population and community-wide patterns of disease. She has authored more than 150 journal articles and book chapters and has been cited nearly 8000 times. She has mentored many undergraduates and masters students who have gone on to PhD programs, as well as PhD students and postdocs who have gone on to faculty positions and applied positions in conservation and science communication. Dr. Ezenwa has received numerous honors. For instance, she serves on the editorial advisory board of *Science* and is a AAAS Fellow. In 2020, Ezenwa was selected by The Community of Scholars as one of the most inspiring Black scientists in the United States.



2023 Animal Behavior Awards

Rowland Award 2023: Lana Bolin

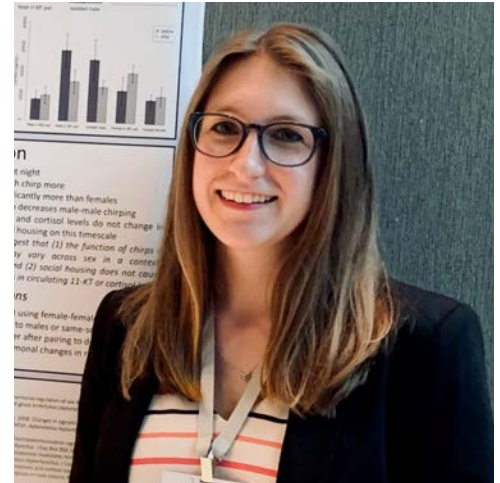
Lana is a student in Jennifer Lau's lab, pursuing a PhD in Biology. Lana is a strong advocate for making research more accessible to all undergraduates, especially those from disadvantaged groups, community college transfer students, and non-traditional students. For instance, Lana consulted with several groups across campus to introduce community college transfer students to careers and research in STEM, build a cohort and create a sense of belonging among transfer students, and teach college success skills. Notably, Lana sought and received funding from IU's Environmental Resilience Institute to implement one of her ideas: ScienceCORPS. Now in its third year, this program uses a distributed experiment to provide paid summer research opportunities to community college students across Indiana (many of whom have to work full time and cannot participate in other full-time summer research programs). Lana mails participants experimental supplies so that students can execute an experiment investigating seed predation in their backyard or a nearby public space. She meets with students online each week to work with them on their experiment and provide professional development. Lana has also collaborated with the GEMS Biological Integration Institute to expand the program to community college students in Illinois and to partner with an education researcher to evaluate how the program affected student learning and perceptions. She and her collaborators are now working to document the success of the program and encourage others to adopt it. Lana continues to work with many of her ScienceCORPS students on posters presenting their findings at regional conferences and to introduce them to additional research at IU.



2023 Animal Behavior Awards

Rowland Award 2023: Megan Freiler

Megan Freiler just finished her Biology PhD in Troy Smith's lab. Her thesis research focused on how species variation in sociality influences the function of communication signals and how social experience influences hormone levels and gene expression in brain regions that process communication signals. Not only is Megan intellectually curious, focused, and hardworking, but she is also passionate about mentoring.



For nearly her whole time at IU, Megan was an instructor and administrator in the Foundations in Science and Mathematics summer courses, helping disadvantaged high school students prepare for college-level science and math and encouraging them to pursue STEM majors. In addition, Megan was a valued member of CISAB's steering committee for five years, served on the program committee for the Animal Behavior Conference since her very first year in grad school, and chaired that committee for the last four years.

Megan also mentored REU interns and undergraduate students in the lab from the very beginning of her graduate career, devoting enormous efforts to helping her mentees develop excellent research skills as well as interesting, independent research projects—talking with them about their projects and experimental design, working with them to analyze data and write it up, advising them on pursuing graduate research, and more. All of her undergraduate mentees completed honors theses based on these projects. Three of her six undergraduate mentees went on to Ph.D. programs; two of those received NSF fellowships. One is now in medical school, another in veterinary school, and the third currently works in IU's Office of the Vice Provost for Research.

2023 Animal Behavior Awards

Hanna Kolodziejski Award 2023: Erica Nadolski

Erica received the Hanna Kolodziejski Award for her many and sustained efforts in mentoring, outreach, and community service during her time at IU. Erica is pursuing a PhD in Biology and is mentored by Armin Mozcek. Erica is interested in how genetic mechanisms, developmental processes, and environmental circumstances combine to shape evolutionary trajectories. Studying this in the context of condition-dependent development in horned beetles, she investigates the role of sex- and nutrition-specific chromatin remodeling across multiple traits and further contrasts this across species that have diverged in a pattern of sex- and nutrition-dependent growth. Armin describes her as an innovative and integrative researcher, and a ferocious and critical reader of the literature.



According to Armin, to Erica the practice of science and the teaching of science go hand in hand. For instance, in the lab, she has mentored many students who come from groups that are underrepresented in the sciences. In the department, Erica co-founded the BioLGBTQ student group, and serves on the department's DEI committee. In the community, she has assisted in teaching outreach modules in high school Biology classes, introduced 3rd graders to the Scientific Method using experiments with live termites, and participated in both Science Fest and Bug Fest. Erica has independently developed a module focused on the Biological Basis of Sex Differences, an area our K-12 teachers tell us is in desperate need of additional, science-based curricular resources. Erica's commitment to service is not just limited to science outreach: she also volunteers at the Bloomington Emergency Youth Shelter.

2023 Animal Behavior Awards

Goodson Prize for Art in Science



2023 Winner: Dr. Kevin Hunt, Indiana University

Grace and son Gusker pant-hoot in greeting as Gusker's father Tusker approaches through the tree canopy in this image from Semliki, Uganda, July 2022. Female chimpanzees, while quite social, are compelled by feeding competition to spend two-thirds of their time away from other adults, accompanied only by their offspring. Males form large groups and range more widely. Some males form special friendships with females and spend time with them. Tusker often spends a day or two each month socializing with Grace before moving off to rejoin male groups.

2023 Animal Behavior Awards

Goodson Prize for Art in Science



2023 Runner up: Maelle Lefevre, Jagiellonian University

Science is also about sharing. This hawfinch (*Coccothraustes coccothraustes*) was caught and presented during a ringing session at my university in Krakow, Poland. This session was open to Ukrainian refugee children to forget the war for a moment and learn more about birds. The children discovered the biology of the species as well as the softness of the bird's feathers. It was a peaceful moment out of time, all about sharing and fascination.

2023 Animal Behavior Conference

2023 ABC Undergraduate Poster Awards



Sydney Szwed *Indiana University*

SINGLE-TIME MELATONIN INJECTIONS MAY INCREASE AGGRESSIVENESS IN MALE SIBERIAN HAMSTERS *PHODOPUS SUNGORUS*

Ethan Guardado *Purdue University*

BODY MASS AND BROOD SIZE INTERACT WITH THERMOREGULATORY MECHANISMS IN WILD NESTLING SONGBIRDS

Alexandra Lumley *Utica University*

IMPACTS OF PRE-GESTATIONAL SOCIAL ISOLATION ON MATERNAL FERTILITY AND OFFSPRING COGNITIVE FUNCTION

2023 Linda Summers Conference Fellows



Top row left to right: Ashlyn Thomas, Ariel Tysver, Mya Knappenburger, and Makenzie Rivera
Bottom row: Ethan Guardado

The Animal Behavior Conference saw five former REU Interns return to present their research at the Friday evening poster session.

2023 Trainee Exchange



Amelia Cuarenta

RESOURCE SCARCITY ALTERS ADDICTION-RELATED BEHAVIORS AND THE BASOLATERAL AMYGDALA TRANSCRIPTOME IN SEX-SPECIFIC WAYS

Center for Behavioral Neuroscience, Georgia State University

Hannah Harder

PERINATAL OPIOID EXPOSURE LEADS TO DECREASED SOCIAL PLAY IN ADOLESCENT MALE AND FEMALE RATS

Center for Behavioral Neuroscience, Georgia State University

2023 Annual Brains and Behavior Retreat at Georgia State University



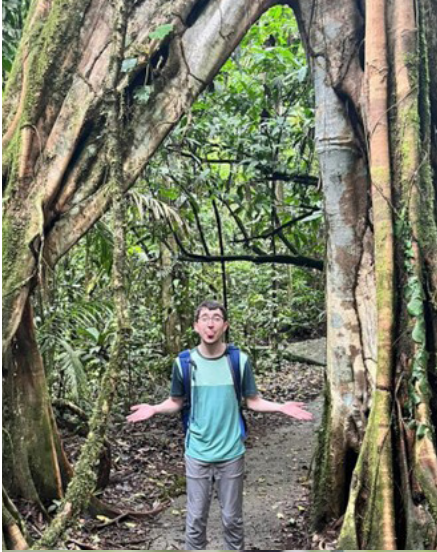
Casandra Sheridan

Thanks to the support from the CISAB program, I had the unique opportunity to attend the Brains and Behavior retreat at Georgia State University in Atlanta. I was introduced to a lively, active research community where I met and talked with multiple professors, such as Mike Beran, discussing the research the ongoing research at GSU. The research there covers a wide range of interesting work in both neuroscience and behavior. I heard various engaging research presentations, especially Dr. Dan Burnston's

keynote presentation on the topic of how the brain decides. During the poster session, I presented my work on the replay of incidentally encoded episodic memories in rats. I received great feedback and enjoyed the conversations sparked from the questions asked. It was also very exciting to see other students' research presented at the poster session. The "brains and behavior" art pieces interspersed between the posters were very creative and added a lot to the session. There were also visual arts/performances held after the poster session, which were very entertaining. Before heading back to Bloomington, a pair of GSU students even took me to the Atlantic botanical gardens, where I learned more about Georgia State University and the academic culture. I greatly benefited from this experience. Attending the Brains and Behavior retreat enabled me to meet many colleagues who share my interest in behavioral research, to present my research and receive helpful feedback, and to engage with cutting-edge, integrative research. I was proud to represent CISAB at the retreat this year!

What are they up to now?

Austen Ehrie: PhD Student in Biology at Texas A&M University



When I first applied to IU's Animal Behavior program, I had my mind set on having a career in animal husbandry. It was not until taking classes on sexual diversity and chimpanzee behavior my sophomore year that I decided to pursue research as a career path. This led me to apply for CISAB's 2021 REU program, where I developed my first research project in Dr. Kim Rosvall's lab. Here, I examined the neurotranscriptomic profiles of reproductive behaviors in the sex-role reversed shorebird, the northern jacana. I not only got to hone my wet lab skills, but I also made connections with the graduate students in the lab and gained valuable insight into what a research career looks like.



Still, I was not yet ready for a graduate program, as I knew that I wanted to study non-human primates and needed field work experience. Luckily, in the summer of 2022, I participated in an IRES program under Dr. Michael Wasserman of IU and the late Dr. Peter Beck of St. Edwards University. In this program, I developed a research project to test whether parallel laser photogrammetry could be used to measure testes non-invasively. To do this, I lived in Costa Rica for 10 weeks and trekked through the rainforests to study mantled howler monkeys!



With both research programs under my belt, I felt comfortable enough to apply to graduate school for Fall 2022. The day after returning to Indiana from Costa Rica, I packed up my things and moved to College Station, TX to begin my PhD studies in Biology at Texas A&M University. I am now in my second year studying female baboon reproductive ecology, specifically in the context of conception, in the lab of Dr. Courtney Fitzpatrick (a CISAB and CTRD post-doc alum!). I hope to soon travel to Kenya and/or Zambia for fieldwork and finally see these amazing animals! Although it has been a challenging experience so far, I am very excited about my research, and I have the best lab that I could ask for. I am also a lab instructor for introductory biology courses, and I have come to really enjoy teaching!

I encourage anyone who is interested in research to apply for undergraduate research programs--they are truly life-changing! I feel very lucky that I get to travel around the world and study animals for my career.

Top to bottom: Austen during his field work in Costa Rica; Austen snapped this photo of a juvenile mantled howler monkey crossing the same bridge as him! (one of the coolest things he saw at IRES); Austen Ehrie with his graduate mentor, Dr. Courtney Fitzpatrick

What are they up to now?

Sabrina Sims: Zookeeper at the Potawatomi Zoo



Growing up I was unsure what I wanted to do with my life, but much like everyone else in this field, I knew that I needed to follow my passion of working with animals. After transferring to Indiana University in 2019, I took a Careers Course and quickly decided to pursue my longtime aspirations. In 2022, I started a zookeeping internship at the Potawatomi Zoo in South Bend, IN. I grew up going to this zoo with my grandparents and going on field trips all throughout elementary school, so this zoo has always had a special place in my heart.

In March 2023, I secured a position as a Seasonal Zookeeper at Potawatomi Zoo, where I had completed my first internship. I began one week after graduation, and not even three weeks into my time at Potawatomi, I was being cross-trained in sections where full-time keepers managed. In the beginning of August, I was promoted to full-time Zookeeper. Currently, I am a Swing Keeper, so I train and work in different areas every day! I work with a wide variety of animals - from education animals like tamanduas, sloths, hedgehogs, to hoofstock animals like rhinos, okapis, kudu, to primates, and to even big cats, like lions, tigers, and leopards. Working with these animals entails cleaning their exhibits and areas, and training, and enriching these animals. All of these aspects are incredibly important in the welfare of these animals - cleanliness is crucial to keep the animals healthy, and enriching animals within human care is extremely important for mental stimulation and physical activity. Enrichment includes, but is not limited to sensory items (perfumes, spices, music, mirrors), environmental items (furniture, new climbing structures, any kind of physical change in their environment), novel foods, socializing (new people, new animals), and foraging (scattering food, puzzle feeders). Animal training is also a form of enrichment in itself to ensure physical activity and mental stimulation when training a new behavior, but is also critical for desensitization the animal to stimuli that might be necessary for routine exams by vet staff or other veterinary intervention like blood draws, ultrasounds, radiographs, or medication administration. The most challenging of these three aspects important for animal welfare are training and enrichment. Training may be challenging if an animal is not willing to participate or is not grasping the behavior that is attempting to be trained, which might cause frustration for both parties, but patience is necessary and retracing steps back to the beginning of training might be necessary. Enrichment is daily, but is often challenging to find new ways and novel items to mentally stimulate the animal without causing the animal to lose interest or become desensitized to the items, or to pick an item or a food that will not cause harm or injury to the animal. Every day is different, but that just makes me love my career even more.

I am grateful for my time spent at IU and the opportunities it has given me to find my true purpose in life. Working as a zookeeper requires a lot of blood, sweat and tears, but it is very rewarding. Zoos (especially AZA accredited facilities) contribute a dire necessity and asset to conservation. I am forever grateful that IU led me to where I am today; I am not only doing what I love every day, I am aiding in the crucial component of conserving species that are disappearing from their natural habitats due to poaching, deforestation, pollution, and climate change.

In Remembrance



Elizabeth "Liz" Carlton Lithio (1987-2023)

The Animal Behavior community was immensely saddened by the loss of Liz Carleton Lithio, who died of cancer on September 17, 2023, at age 36. Liz was a graduate student in Biology, where she worked with Greg Demas on the role of energetic signals and stressors in regulating reproductive immune trade-offs and seasonal sickness responses in Siberian hamsters. After completing her PhD, Liz completed a masters degree in education, which she put to good use pursuing her passion for teaching science to middle-schoolers. Liz was a committed CISAB graduate student, and a key member of

the graduate student organizing committee for the Animal Behavior Conference. During her time at IU, she received both the Rowland Award in recognition of her commitment to undergraduate mentorship and the Hanna Kolodziejski Award in recognition of her commitment to community service. She was also a predoctoral trainee on the Common Themes in Reproductive Diversity training grant, demonstrating her excellence in research.

Those of us in the CISAB community who knew Liz will remember not just her many accomplishments, but also her warmth, humor, and infectious laughter. Our thoughts are with Liz's family and friends as we share their grief.

Contributions to the Program in Animal Behavior help our scholarship and fellowship programs, travel awards for graduate and undergraduate students, the Animal Behavior Conference, and more.

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