Animal Behavior Bulletin

2020

IN THIS ISSUE

Dear CISAB Community,

Long time no see . . . literally! I know that many of us want to just put this long, long pandemic year behind us, and I can certainly sympathize. But it does seem that there is now light at the end of the tunnel, and I for one cannot wait to see some smiling, maskless student faces, and to interact in real life rather than via a Zoom screen.

Despite the trials we've all experienced over the past year, as you will see in the following pages, CISAB's students, faculty, and staff have nonetheless accomplished remarkable things. In this year's bulletin, you will read about the accomplishments of our graduate students, including those who recently completed PhDs, and 2020's CISAB and CTRD fellowship recipients.

I know I speak for many other CISAB faculty when I say that it is gratifying not just to read about the accomplishments of our graduates, but also to learn how, for instance, the connections that Emily Dunham made in Dr. Adam Smith's Animal Behavior Workshop led not just to an internship but to a job, and to see one of the founding principles of our major translated into not just Leah Widdicombe's postgraduate work, but also her assertion that "research about animal behavior, ecology, physiology, and anatomy is crucial for informing our policies surrounding nonhuman animals."

I'll end with some exciting news: In recognition of our academic and research mission, and to enhance our ability to achieve our educational and research goals, we are now officially the Program in Animal Behavior. Our Program status does not change our goals or scope, but more accurately reflects our extensive academic, research, and outreach missions.

As always, many thanks for all of your contributions to the Animal Behavior community. CISAB thrives on the strength of its engaged faculty and student members, both past and present. We can't do it without you!

Cheers,

Marc

Congratulations CISAB and CTRD Fellowship Recipients

CISAB Fellowship Recipients 2020-2021

Michelle Benavidez
Wasserman Lab

Megan Freiler
Smith Lab

Beth Morrison
Demas Lab

Kat Munley
Demas Lab

CTRD Predoctoral Fellows 2020-2021

Elizabeth George
Rosvall Lab

Eric Navarro
Hurley Lab

Tessa Steiniche
Wasserman Lab

Katie Talbot
Ketterson Lab

CTRD Postdoctoral Fellows

Left: Jessica A. Cusick
Demas Lab & Wellman Lab

Right: Alexandra Bentz
Rosvall Lab

Congratulations CISAB Members

In May, CISAB hosted a come-dressed-as-your-favorite-animal virtual reception for our 2020 Animal Behavior graduates

Spring 2020 Graduates

Emily Ashenbremer
Sienna Gonzalez
Jenna Graham
Delaney Johnson
Christa Knapp
Trevor Lange
Vinicius Lanza
Yasmin Lord
Hannah Lothamer
Ethan Schaffer
Layne Sermersheim
Taylor Trump
Amanda Wollenweber
Sophia Yates

Summer 2020 Graduates

Erica Adams
Francesca Chipparoni
Dorothy Daulton
Ashley Drury
Bailey Harstock
John Hermanek
Lindsey Maddox
John Tunon

Fall 2020 Graduates

Tara Empson
Jessica Lawson
Margaret Melchi
India Sloan
Kristen Weisner

News from the Animal Behavior Major

By AB Lecturer Dr. Adam Smith

I think it's safe to say that 2020 was a year unlike any other. Our students felt the impact of the pandemic, with classes suddenly shifting to online instruction and internships getting canceled. However, we were fortunate enough to still maintain some of the key aspects of our program, particularly during the fall semester. We were able to offer the animal behavior laboratory class in-person, and the students did a great job of designing and executing their group projects even with limited time and resources. For the workshop class, several members of the CISAB community and ABEH alumni joined us remotely as guest speakers. So even though it seemed like much of the world came to a stop this past year, the ABEH program keeps plugging away. We look forward to another (and hopefully smoother) year!

Above: Dr. Adam Smith. Below, left to right: hissing cockroach; bess beetle; fiddler crab. Project photos provided by-Abbi Smith.

News from the Mechanisms of Behavior Lab

From Lab Director David Sinkiewicz

The CISAB Mechanisms of Behavior Lab continued to serve the Animal Behavior community through 2020 as a recharge center enabling molecular research to be done at a manageable cost.

As is the case for everyone these days, the COVID-19 pandemic has made the logistics of our shared-use facility more complicated. We have had to limit the number of people who can be in the lab simultaneously and enforce more stringent cleaning procedures to continue making our space available and keep our users safe.

We were able to keep the CISAB lab available for those doing essential research while the campus was closed to non-essential work. Additionally, we were able to reopen the lab for all research when the campus was reopened at the beginning of June 2020.

When the lab was reopened to all research we were also able to install a CO2 backup system for our -80°C freezer. This system will ensure that anything in our freezer will remain at an appropriate temperature even in the event of a power outage in the Biology Building.

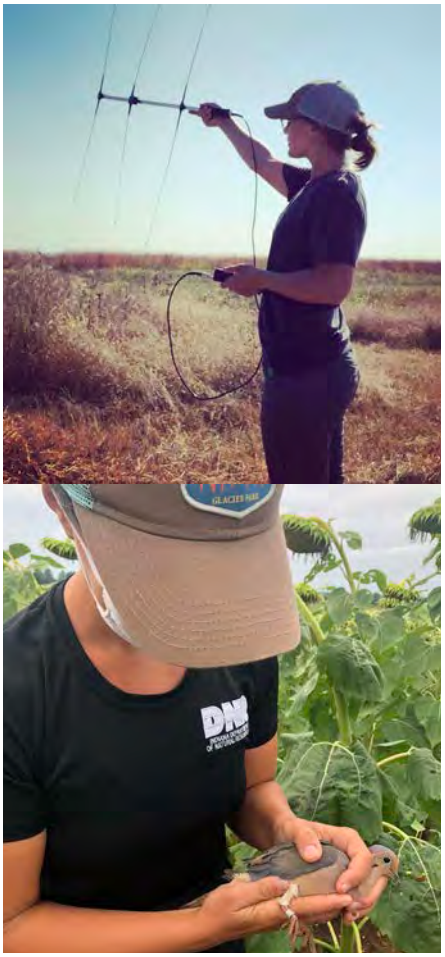
While this time is difficult for all of us and introduces new logistical issues for laboratory consumables, the CISAB lab continues to operate and support your research as best we can.

Internship News

Gray Hite enjoyed an internship with Coral World Ocean Park in the U.S. Virgin Islands

This past year I was lucky enough to spend six months as a marine mammal and tropical bird training intern at Coral World Ocean Park in the US Virgin Islands. I worked with South American sea lions, Atlantic bottlenose dolphins, a few species of macaws and rainbow lorikeets. I learned from everyone I worked with including how training animals works and how challenging yet rewarding this field can be. I never knew what my day would look like, everyday was different. One day I would be cleaning sea lion pools and taking pictures for interaction programs and another day I could be feeding a dolphin during an actual tropical storm. Somehow my last year combined hard work with some of the happiest days of my life and I'm forever grateful. I can't wait to graduate so I can continue working with amazing animals.

Sarah Armstrong interned as a Small Game Technician with Indiana Department of Natural Resources



Top to bottom: Sarah doing telemetry in the field; Sarah holding a banded American Mourning Dove

I was hired as a Small Game Technician at the beginning of the pandemic and was able to spend most of my time working independently in the field or remotely from home. In the field, my first project was performing population surveys on Woodcocks. This involved traveling an hour and a half several nights a week to a remote location and listening for the unmistakable call they make around sunset. Other projects throughout summer included trapping and banding mourning doves and Canada geese and auditory population surveys on grassland songbirds, which have seen great decline in the recent past due to loss of habitat. There were often opportunities to assist in other areas within the DNR. I worked with the herpetologists to look for a specific species of frog, and with the furbearer biologist performing reproductive tract dissections on otter carcasses to determine their reproductive status at the time of harvest. One of my favorite things I learned during this position is tracking animals who have radio telemetry units attached. I tracked bobwhite quail who had previously had transmitters placed on them to assist with a long-term study to increase bobwhite quail populations across the state. This winter, I was very, very excited to be part of a small group of people who tracked, observed, recorded, and placed leg bands on the few whooping cranes left in the country. Without the internship requirement, I may not have had the initiative to leave my full time position for an unknown, intermittent job with the DNR. I am so happy that I did and can't wait to see what the future brings!

2020 Alex Black Memorial Scholarship

Margaret Melchi spent the summer of 2020 at the Fort Wayne Children's Zoo

Maggie was the first recipient of the Alex Black Memorial Scholarship. This scholarship honors the memory of Alex Black (B.S. Animal Behavior, 2018). Alex was a creative, engaged, and inspiring student who sought out a variety of internship experiences both during her time here at IU and after her graduation. Alex's parents Tom and Caroline established the scholarship to support Animal Behavior majors as they broaden their experience through internship experiences. We are enormously grateful for their generous and gracious gift.

My time at the Fort Wayne Children's Zoo was absolutely amazing. It was such an interesting experience watching the zoo handle the complications that came with COVID-19, such as requiring their employees, interns, and volunteers to wear masks at all times while working on the zoo grounds, which were actually made by a zoo employee. They also had hand sanitizer stations at the front gate and throughout the zoo, and a set staff constantly cleaning all areas of the zoo. To add, they also had social distancing reminder stickers on the ground throughout the zoo, and they closed certain exhibits that require lots of physical contact between guests. The zoo first opened their doors again on June 14th to their members only with time reservations to manage capacity. Some of my duties included checking guests in, renewing and selling memberships, answering questions, doing sanitation work at the front desk area, working inside the main office, and doing guest service walks throughout the zoo, where I interacted with guests as they observe the animals. I am so grateful for my time and experience working with the Fort Wayne Children's Zoo!

Counter-clockwise: Margaret Melchi; ostrich; child feeding giraffe; giraffes

2020 Animal Behavior Awards

Rowland Award 2020: Elizabeth George

A graduate student in Biology and a CISAB member, Elizabeth has earned the Rowland award based on the impressive breadth and depth of her mentorship of undergraduates in the Rosvall lab, and the lengths she has gone to in fostering the independent research projects of her mentees—for instance, even learning Graph Theory to accommodate the interests of one of her undergraduates. The students Elizabeth has worked with describe her as a caring and patient mentor, and cite her ability to instill in them the importance of attention to detail as well as teaching them field techniques, data acquisition and analysis, and scientific writing and presentation skills. Elizabeth's mentorship has clearly had a profound impact on many students. As one student put it, Elizabeth "has made my research experience the peak of my academic career thus far." Dr. Kim Rosvall cites how critically important Elizabeth's mentorship has been in her lab, not just at the undergraduate level, but in helping educate other graduate students and lab personnel in techniques, compliance issues, and data management.

Hanna Kolodziejski Award 2020: Lana Ruck

A graduate student in Anthropology and Cognitive Science and a CISAB member, Lana received the Hanna award in appreciation of her extensive outreach work, including (but by no means limited to!) serving as Anthropology's Event Coordinator for IU Science Fest; co-Editor at Large and Copyeditor of the College's science blog, ScIU; and organizer of several workshops on science communication. The fact that Lana has been able to accomplish this breadth and quantity of outreach while also mentoring students in the lab and via IU's Research Scholars Cohort Program; volunteering at Science Olympiad; serving as a counselor for the NSF-sponsored Girls with Nerve summer camp, and maintaining a variety of service responsibilities both inside and outside the University is remarkable. Combining those accomplishments with maintaining an active research program as she works towards her PhD is extraordinary. As Dr. Tom Schoenemann described in nominating Lana for the award, her research productivity, combined with her mentorship of undergraduates who are under-represented in STEM fields, and her science outreach truly exemplify the values that underlie the Hanna scholarship.

2020 Animal Behavior Awards continued

2020 Excellence in Honors Thesis Research Award: Kathryn Tafoya

Assessing the effects of human activity related to sustainability and biodiversity conservation on tropical forests and primates.

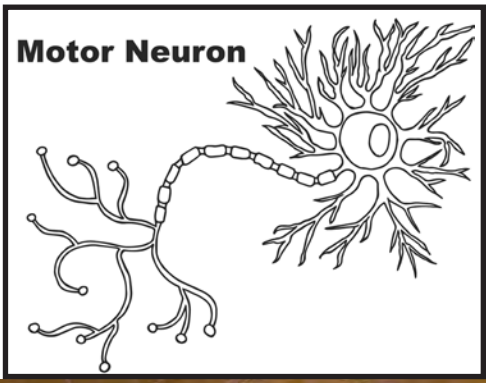
Mentor: Dr. Mike Wasserman

Visit *Frontiers in Environmental Science* to read the article:

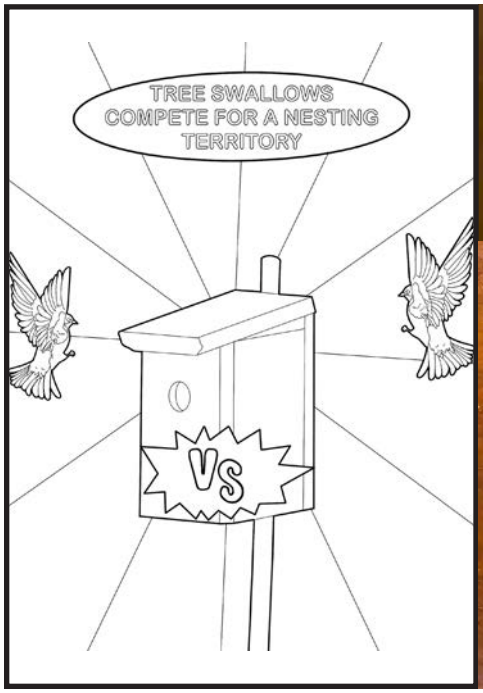
www.frontiersin.org/articles/10.3389/fenvs.2020.580724/full

2020 Virtual Science Fest

This year IU launched a virtual Science fest, allowing the activities to be accessible for the entire school year. Many thanks to CISAB assistant Charli Taylor and CISAB graduate student members Megan Freiler and Michelle Benavidez for their efforts in creating our 3-part Program – Build a Motor Neuron with Play Dough, Electric Fish Demonstration, and Motor Neuron coloring sheet. CISAB also thanks Kim Rosvall for linking her lab's tree swallow activities.



Clockwise: motor neuron coloring sheet; complete motor neuron chain; tree Swallow; home made play dough; tree swallow coloring page



What are they up to now?

Leah Widdicombe: Program Coordinator of the Dog Care Academy, a job training program in the pet care industry for individuals experiencing homelessness

When I graduated in the first cohort in 2015, my career path felt like uncharted territory. After 3.5 years of studying animal behavior at IU, I surprisingly became more enamored with human behavior—specifically how humans interact with and perceive other animal species. While completing my animal behavior degree, I also minored in anthropology, and bioanthropology classes really impacted my academic pathway, blending the overlap between humans and other animals. The concept that I loved learning about the most was Evolution—I began to understand that humans are animals, and as animals, all of our behaviors are genetic and learned, our emotions are surges of hormones, and most of our relationships are expressions of social grooming, sexual selection, etc. I learned that humans are nothing special.

I realized at IU that I loved public speaking, conducting research, and collaborating with students and professors. Inspired by fantastic educators, I decided I'd like to someday become a professor of Human-Animal Interactions. This field felt very narrow, with few graduate programs in this topic. But I soon discovered the Master's in Animals and Public Policy program at the Cummings School of Veterinary Medicine at Tufts University. This program focused on human-animal interactions, ranging from farm animal welfare, interactions with wildlife, our close relationship with companion animals, and the regulations surrounding lab animals. In each topic, we studied the ways animals are (or are not) written into our laws and policies, and how they should be. To be honest, while I was in the Animal Behavior program at IU, I occasionally wondered "why does any of this matter?"—and now I know just how important my animal behavior degree was. The incredibly detailed research about animal behavior, ecology, physiology, and anatomy is crucial for informing our policies surrounding nonhuman animals.

During my Master's program I got the opportunity to combine my worlds of human psychology and evolutionary theory! I designed, conducted, and analyzed a social science research project exploring how U.S. Law and Policy students conceptualize their biological and social identity as an animal species, and how this identity relates to their political concerns for nonhuman animals. I am currently in the process of submitting my research for publication.

Upon graduating from Tufts in 2019, I sought to grow my skills as an instructor. I taught a summer course on Zoology through the Johns Hopkins Center for Talented Youth, sharing my knowledge about animal behavior, evolution, and public policy in a creative way. Then a unique opportunity arose in the Workforce Development department at St. Francis House, which is a day shelter for people experiencing homelessness. In my role, I design, coordinate, and instruct a new job training program in the animal care industry—we call it the "Dog Care Academy" – providing people who currently don't have stable housing /income an internship and classroom experience where they can learn the ins and outs of professional pet care, eventually finding animal-related jobs at the end of the 6 month internship. My students learn about dog behavior and human-animal interactions, among other career development skills.

I'm looking forward to continuously expanding on a fulfilling career where I can study and teach about the ways that humans understand animal behavior, and the implications this has on our interactions with nonhuman animal species globally.

What are they up to now?

Emily Dunham: Bloomington Animal Care and Control

When I enrolled at IU, I had no idea there was an animal behavior program. I declared my major guided by the reassurances from friends and family that it was a perfect fit. However, I had no idea what I planned to do with my degree. I began to gravitate towards animal shelters. As luck would have it, the behavior and volunteer coordinators (Emily Herr and Jenny Gibson) at Bloomington Animal Care & Control were speakers in my sophomore workshop class. I started there as an unpaid intern through CISAB in 2016 doing positive behavior modification, enrichment, and basic training. I continued as a volunteer after my internship ended, as a dog walker, writing and doing voiceovers for the Pets Without Partners program, and participating in our Borrow a Dog program.

A few months prior to my graduation in 2018, I was hired as the first paid intern at BACC. My original responsibilities centered around doing behavior modification with flagged dogs, but I have since expanded my duties to include kennel enrichment, write bios for the dogs, take photos for our website and social media, and assist with events. In some cases, I also work with potential adopters interested in behavior program dogs to highlight their needs and merits. I am now certified in Fear Free Sheltering and continue to further educate myself through programs offered by groups like the ASPCA, ACT Training, and Maddie's Fund.

Animal welfare, and in particular shelter advocacy, is the niche of animal behavior that I find most rewarding. I am able to work outdoors, develop creative training solutions, and be a source of comfort for animals that have never known compassion. I have learned so much about dog behavior, body language, play styles, and sheltering practice in the past few years, but I also recognize that I have so much more to learn. Having a mentor, Emily Herr, who teaches kindness and empathy is invaluable and I am honored to work alongside her and the rest of the team at BACC.

In the next few years, I hope to enroll in the Animal Behavior College to obtain my professional dog training license. I would love to work specifically with clients who have adopted shelter pets and are making the transition into a home. I plan to remain with BACC for as long as they will have me. Bloomington is such a pet-friendly community, and it is full of opportunities to advocate and improve the lives of our animals.

Top to bottom: Emily with adoptable dog Lightning; play group for Ella, a long-time foster dog; Emily with adoptable dog Cheech; outside play group

What are they up to now?

Caroline Fischer: Living Desert Zoo, Palm Desert, California

The Animal Behavior major was actually the reason I chose to come to IU! I wanted to study something different than the classic biology or zoology, and I knew having the Animal Behavior degree would help me stand out among other applicants when applying for jobs post-graduation. I absolutely loved the curriculum the CISAB program offered, and I learned an abundance from my labs and workshops. My favorite classes were always with Adam Smith! I always knew I wanted to pursue zookeeping, and refining my knowledge on animal behavior definitely helped in this career. Knowing how to observe the animals I am caring for (natural behaviors, versus signs of stress) puts me and the animals in a safer and more successful environment. By understanding their life history, I can provide better enrichment (for a terrestrial species that loves to climb, versus another that is much more scent-oriented), and give the best husbandry care for their daily needs.

I interned and had a seasonal zookeeping job at the Indianapolis Zoo, which really helped me get my foot in the door for my professional career. Currently, I am a full-time zookeeper at the Living Desert Zoo in Palm Desert, California. I am on the Africa team, and currently take care of zebra, dromedary camels, addax, and bighorn sheep. I tend to their daily needs, such as raking their yards, feeding them, offering innovative enrichment, and my favorite part: training! I have been working on training with our baby dromedary camels for a few weeks now, and I adore them! They are quite intelligent, and very funny to watch when they play together. One of the behaviors I have been working on are "head-turns". By a verbal and hand cue, the camels should turn their necks to the side. This helps zookeepers ensure their neck muscles are moving properly, and no one is feeling any pain. I can piggy-back off these behaviors, and have them move different parts of their body, to get them to walk to places, lift their feet, all to ensure they are physically well.

I am very appreciative of all IU and the CISAB program has offered me. The smaller tight-knit community always made me so welcomed and appreciated for my hard work. It's a wonderful feeling when all of our professors know you and your classmates by name, and ask about your progress. I even did a Skype call for one of Adam Smith's A200/400 classes a few months ago to give advice about the zookeeping field to younger students. Connections are everything! I made great friends in my classes with whom I still keep in touch, and I hope I can offer the same help to incoming and current students.

Left to Right: Caroline with camel; Caroline with giraffe; Caroline with zebra

What are they up to now?

Christina Sluka: Pursing a PhD in Ecology

Since my graduation from IU in 2019, I have moved to the University of Wyoming in Laramie, WY to pursue a doctoral degree in Ecology. During my time at IU, I was fortunate to be an undergraduate assistant in Dr. Jon Crystal's lab working on research on olfaction and memory in laboratory rats. Through that experience I was exposed to multiple odor-based methods for assessing learning and memory in animals. I also completed an undergraduate thesis on the behavioral differences between raccoons and other woodland species.

One of my first thoughts for my doctoral research was determining if odor methods could be used in a wild species like raccoons, combining my two IU experiences. Raccoons are a well-known nuisance species but their success in urban spaces is not well understood. One of the main issues is that assessing cognition in the field is quite difficult, as the limitations of field work can reduce the effectiveness of methods previously used only in the lab. Prior research on wild raccoons had relied on visual cues which may not be as effective as odor-based cues in a nocturnal carnivore like raccoons. So, I decided to run a preliminary study on captive raccoons to determine if olfactory methods may be viable for field use with wild raccoons during a single field season (1-4 months). To do this, I recreated some of the methods I used in Dr. Crystal's lab and altered them for use with raccoons to see if raccoons can discriminate odors. I had a reasonable expectation that raccoons can and should be able to discriminate odors as they scent mark as communication and previous studies show they can locate buried turtle nests based only on smell. However, even with these expectations, and after five months of training, none of the raccoons showed that they could discriminate odors. We concluded that it is unlikely that raccoons cannot do these tasks but more likely that they either need more time to learn (more than a field season can provide) or the tasks were not motivating enough. Either way, we determined that these methods, as they stand now, are not suitable for field use.

This research was directly based on my experiences at IU as an undergraduate researcher and while the results of my study were not as expected, the research is one more step in understanding raccoon cognition. It also gave us a clearer picture of how motivation may play into a raccoon's willingness to participate, something we found is not congruent with willingness to learn. This research is currently in prep to be published and while my dissertation research will not be directly related to olfaction, my experiences at IU and with CISAB still drive my current interest in animal behavior and cognition.

Follow @uwraccoonproject on Instagram and @uwyoABClab on twitter.

Left to Right: Christina with raccoon; raccoon participating in study; Christina releasing raccoon

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

Please consider donating to CISAB at myiu.org/one-time-gift. Type 'ANIMAL' in the Search Box to find "Center for Animal Behavior."

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