



ANIMAL BEHAVIOR BULLETIN

Fall 2016

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Letter from the Director

Dear CISAB Community,

There have been so many exciting developments at CISAB since the last newsletter!

Our almost brand-new B.S. degree in Animal Behavior is thriving, with 100 majors as of this writing. To support the growth of the major, we've hired a **new Lecturer**, Adam Smith, to teach classes and coordinate our very popular internship program.

Christy Burgeon Burns continues to innovate as director of the newly re-named **CISAB Mechanisms of Behavior Lab**, including streamlining billing procedures and acquiring fancy new nucleic acid purification equipment.

Under the guidance of Laura Hurley, our NSF-funded **Research Experience for Undergraduates** hosted another crop of stellar undergraduates. Under the directorship of CISAB founding member Ellen Ketterson, the NIH-funded training grant **Common Themes in Reproductive Diversity** was renewed for another 5 years and continues to support and mentor pre- and postdoctoral trainees.

And we've at long last completed a much-needed overhaul of CISAB's website. The new website includes a **main site** with information for prospective and current students, faculty and staff, alumni, and other visitors; a **student portal** where CISAB students will find the "nuts and bolts" information they need to go about the business of being students (including downloadable CISAB logos for posters and presentations); and the **faculty+staff intranet** provides faculty and staff with efficient access to policies and procedures. Check the **News + Events** page regularly for announcements about deadlines and upcoming events!

Finally, the **2016 Animal Behavior Conference** continued the tradition of an excellent and growing venue for exchange of research updates and ideas, and we have been able once again to recognize our outstanding students and faculty with an array of **awards and fellowships**.

All the best,

December 2016



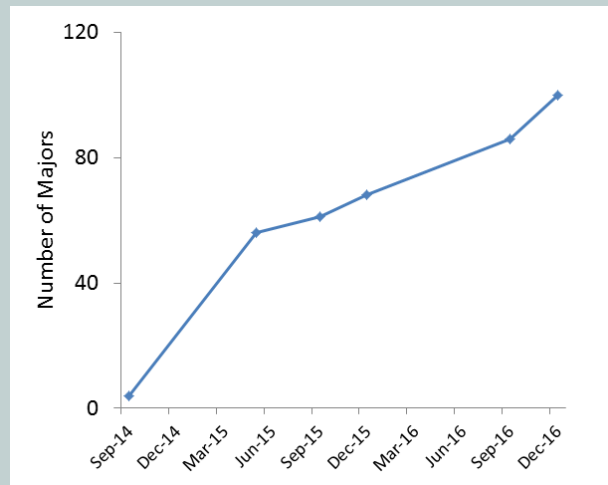
Visit our new
website!

animalbehavior.indiana.edu

Update on the Animal Behavior Major

Fastest-Growing Major in the College!

In the Fall of 2014, CISAB introduced the first undergraduate major in animal behavior at a major research university in the U.S. The major is proving to be remarkably popular. The number of majors in our fledging program is growing practically exponentially (see graph at right)—currently we have at least 100 majors! We graduated our first two students with the Animal Behavior B.S. in May of 2015, followed by twelve more in 2016, and we welcomed five Direct-Admit freshmen in the Fall of 2015 and seven this Fall.



We're working hard to help the major to thrive:

we've hired Adam Smith as our first Lecturer in Animal Behavior (see p. 3), increased our ABEH-A401 Topics in Animal Behavior offerings, and expanded our internship program. In the 2017-18 academic year, we'll be offering our Workshops in Animal Behavior in both Fall and Spring semesters, and will offer a lab course in animal behavior (ABEH-A350) for the first time in Fall 2017.



In May, CISAB hosted a reception for our 2016 Animal Behavior graduates. Attendees included: Front Row— Faith Yarnoff, Brigit Rooney, Kim Cook, Morgan Napier. Back Row— Kelly Lannin, Kelly Miller, Anna Sernau, Rachel Scott

CISAB Welcomes Our New Lecturer, Dr. Adam Smith

Adam received his Ph.D. from the University of Maryland, and he spent time as a postdoctoral fellow in the labs of Dr. Troy Smith (as a trainee in the Common Themes in Reproductive Diversity program) and Dr. Laura Hurley here at IU. His research focuses on the genetic underpinnings of sensory processing and communication. During his time as a postdoc, Adam had the opportunity to teach the Animal Behavior Workshop course in conjunction with Dr. Troy Smith. Thus, Adam has been participating in the growth of the Animal Behavior major from its beginning. This fall, Adam taught classes for both Animal Behavior and Biology, including A401 Behavioral Genetics and Epigenetics and L423 Brain, Behavior and Evolution.



This spring, he's teaching A200/400 Workshops in Animal Behavior and L318 Evolution. As the first lecturer in CISAB's Animal Behavior program, Adam says he's extremely excited about the prospect of expanding the Animal Behavior curriculum. He's currently developing a new lab course in Animal Behavior, which we plan to offer in Fall 2017.



Spring Semester 2017 Animal Behavior Classes

A200/A400 – Workshop in Animal Behavior/Advanced Workshop in Animal Behavior. These courses expose students new to the major to the range of research topics within animal behavior, and provide information on experimental methods and design, as well as potential research opportunities and career paths in animal behavior. At the same time, new students learn from the experiences of the seniors in the advanced workshop. Taught by Dr. Adam Smith.

A401/A501 – Sensory Ecology. Sensory systems are the filters through which animals obtain information about their environments. Their proper function is crucial to behaviors promoting survival and reproduction, and sensory systems are therefore important substrates for evolutionary change. The sensory ecology course will explore how the interactions among the sensory abilities of animals and sensory information available in different environments can shape behavior and the evolution of behavior. Taught by Dr. Laura Hurley.

A501/P567 & P457 – Social Brain Seminar. The mammalian brain contains a set of structures and pathways that appear selectively tuned to social stimuli and which are responsible for the expression of a wide range of social behaviors. This neural complex, now called *the social brain* has become a vital topic in behavioral neuroscience, cognitive neuroscience, animal behavior, anthropology, social psychology, as well as biomedical research on autism and other psychological disorders, and more. The seminar surveys and samples the diverse literatures united around the social brain. Topics covered include neural structure and function, endocrine aspects, development, evolution, brain imaging studies, and behavioral manifestations – from the perspectives of the various disciplines that have adopted the social brain.

Our Internship Program Continues to Grow

Supervised by Adam Smith with assistance from Charli Taylor, our internship program is thriving. We've added four new sites over the past year, with more on the way, and enrollments in ABEH-X473 are ever-increasing.

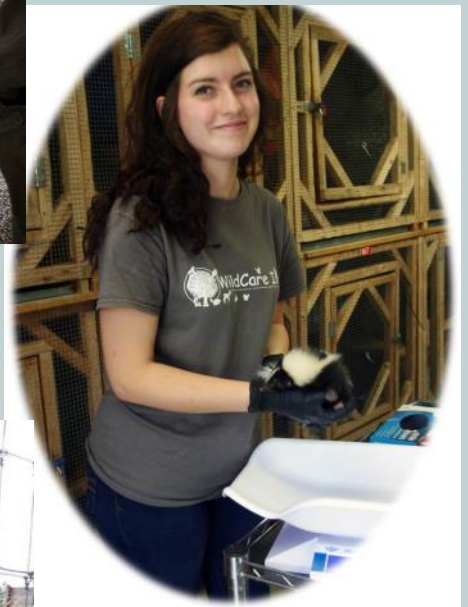
In the spring and summer of 2016, fourteen interns volunteered in Bloomington and beyond. Most of our interns worked at WildCare and WonderLab. The student interns here have not only helped with animal care, but also developed numerous outreach and educational tools for their sponsor organizations. WildCare and WonderLab are quite popular with our students, and many continue to volunteer after completing their internships.

Several students have traveled further afield to find the internship that's right for them. For instance, Morgan Napier interned at Ouabache State Park in northeastern Indiana, helping to manage the park's bison herd and developing guidelines for future management practices. Alexandra Nazelrod worked at ZooMontana, the only zoo in the state. And Sienna Gonzalez completed an international internship—a first for CISAB—at the Chengdu Giant Panda Research Base in China. These internships are always initiated by the students, and they are directly responsible for the growth of CISAB's network of partner sites. We look forward to the continued expansion of our internship program and to further success for our students!



Sienna Gonzalez completed an internship at the Chengdu Giant Panda Breeding Research Base in China.

Eden Long interned closer to home at WildCare, assisting with native wildlife rehabilitation.



Morgan Napier assisted with bison herd management at Ouabache State Park.

News from the CISAB Mechanisms of Behavior Lab

To better reflect the mission of the Lab, we have a new name! The **CISAB Mechanisms of Behavior Lab** continues to operate as a recharge center, where users are charged at cost for supplies and reagents used for a number of commonly employed research techniques. **Many users report significantly reduced costs of their research by being billed per sample by the CISAB lab**, thereby avoiding the purchase of excess amounts of expensive reagents that will go unused. Other users elect to take advantage of specialized training or free access to shared equipment that may not be available in their home lab. Some exciting new developments:

iLab Scheduling and Billing Workflow

We're participating in a pilot program to test iLab software as a scheduling and billing solution for the IU Bloomington campus. Our new iLab website was developed last fall in conjunction with the Research Technologies Division of UITs, and was launched in December. This site has replaced the Google calendar scheduling system we formerly used. Lab billing is now conducted through iLab, which has been integrated with KFS so that lab-specific accounts can be charged directly by approved users. We're excited about our improved ability to track the myriad ways in which our community uses the Lab. my.ilabsolutions.com/sc/4081/cisab-mechanisms-of-behavior-lab/

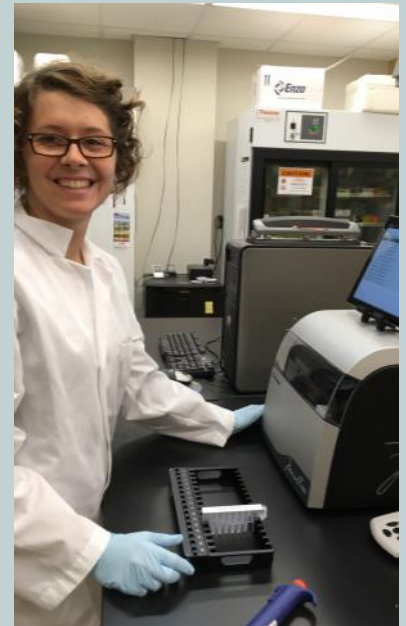
New: Automated Nucleic Acid Purification

We recently purchased a Promega Maxwell RSC Instrument, which automates DNA or RNA extraction of up to 16 samples at a time. The equipment works with kits designed for a variety of sample types, such as buccal swabs, whole blood, or formalin-fixed paraffin embedded or fresh tissue sections. Ours is the first such instrument available on the IU Bloomington campus. **The new Maxwell machine is already enhancing efficiency and quality of nucleic acid extraction for a number of CISAB lab users**, often at little to no additional cost compared to the more labor-intensive or error prone methods that are typically used. Interested CISAB-affiliated students and faculty may contact the lab director for a free trial of the equipment with their samples! This purchase was made possible via matching funds provided by OVPR in support of the NIH-funded Common Themes in Reproductive Diversity training grant.

New Equipment Available to the CISAB Community

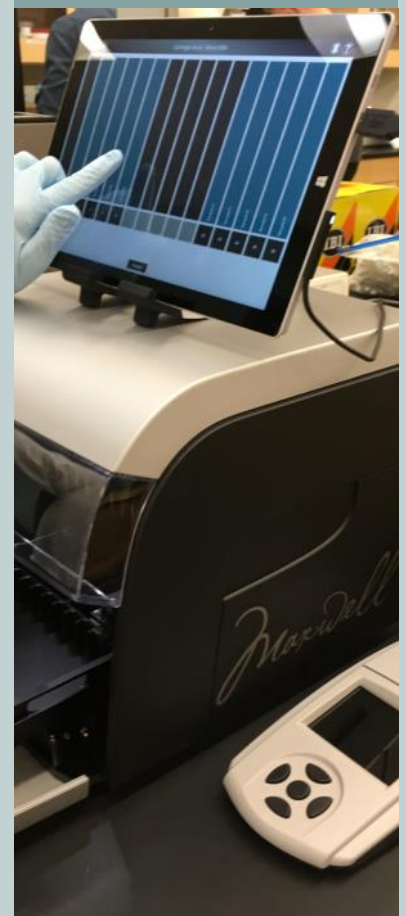
We also recently acquired 2 new evap-o-racs for drying samples in different sized test tubes, a new benchtop mini-centrifuge, and a homogenization motor compatible with disposable plastic pestles. We also thank **Virginia Vitzthum for her recent donation of a Luminex multiplexing system and a Nexcelom Auto T4 cell counter**. Stop by to learn more about how the lab may enhance your research!

- Dr. Christy Bergeon Burns



Above: Lab Director: Christy Bergeon Burns in action

Below: The new Maxwell RSC Instrument



Another Successful REU Program in Summer 2016



Summer 2016 Research Experience Undergraduate Program interns : Top Row, Left to Right—Aidan Geissler, David Navarro Row 2: Sophie Dewil, Lyan Padilla Velez, Severine Hex, Peyton Thomas, Patricia Baez Ramos, Row 3: Bianca Almeida, Sabrina Serrana, Adilene Osnaya, Ana D. Gonzalez, and Fatima Ramis

To cap off their summer research, REU students presented their findings at the CISAB House:

BIANCA ALMEIDA, Federal University of ABC, Santo André, SP, Brazil

Episodic Replay in Rats

Mentors: Dr. Jonathon D. Crystal and Danielle E. Panoz-Brown, Dept. of Psychological + Brain Sciences

PATRICIA BAEZ RAMOS, University of Puerto Rico, at Mayagüez

Effects of Postnatal Sickness on Reproductive Development and Function in Siberian Hamsters *Phodopus sungorus*

Mentors: Dr. Gregory Demas and Kristyn Sylvia, Dept. of Biology

JAYLEN BEATTY, Transylvania University, Lexington, KY

Going With The Flow: The Impact of Resource Residence Time on Microbial Community Structure and Function.

Mentors: Dr. Jay Lennon and Nathan Wisnoski, Dept. of Biology

SOPHIE DEWIL, Vassar College, Poughkeepsie, NY

Modeling the effect of Architectural Modularity in an Evolvable Neural Network

Mentor: Dr. Randall Beer, Cognitive Science Program

AIDAN GEISSLER, Indiana University, Bloomington, IN

Effects of Testosterone On Longevity in *Junco hyemalis*

Mentors: Dr. Ellen Ketterson and Samuel Slowinski, Dept. of Biology, and Britt Heidinger, North Dakota State University

ANA D. GONZALEZ, University of Puerto Rico at Cayey

Effects of Frequent Disturbance on the Immune System of a Songbird, the Dark-eyed Junco

Mentors: Dr. Ellen D. Ketterson and Rachel Hanauer, Dept. of Biology

SEVERINE HEX, Cornell University, Ithaca, NY

Testing for Episodic Replay in Rats

Mentors: Dr. Jonathon Crystal and Danielle Panoz-Brown, Dept. of Psychological + Brain Sciences

DAVID NAVARRO, Washington State University, Pullman, WA

Does Short Term HPG Axis Activation have Longer Term Consequences in Tree Swallows (*Tachycineta bicolor*)?

Mentors: Dr. Kimberly Rosvall and Elizabeth George, Dept. of Biology

ADILENE OSNAYA, Dominican University, River Forest, IL

The Effects of a Propranolol on Heartrate in Mice

Mentors: Dr. Jeffrey Alberts and Paul Meyer, Dept. of Psychological + Brain Sciences

LYAN PADILLA VELEZ, University of Puerto Rico, Cayey, PR

Influence of Multisensory Systems on Behavior of Social Groups

Mentors: Drs. Emilia P. Martins and Piyumika S. Suriyampola, Dept. of Biology

FATIMA RAMIS, Stetson University, Deland, FL

Male CBA/J and Autistic Model Balb/c Mice Interpret Dismissive Female Repertoires; Sociality Affects Response.

Mentors: Dr. Laura Hurley and Kayleigh Hood, Dept. of Biology

SABRINA SERRANO, Kenyon College, Gambier, OH

Characterization of Communication Signals in the Weakly Electric Fish, *Eigenmannia*

Mentors: Dr. G. Troy Smith and Misty Proffitt, Dept. of Biology

PEYTON THOMAS, Transylvania University, Lexington, KY

The Effects of a Resuscitation Promoting Factor RPF on Microbial Community Diversity and Plant Fitness

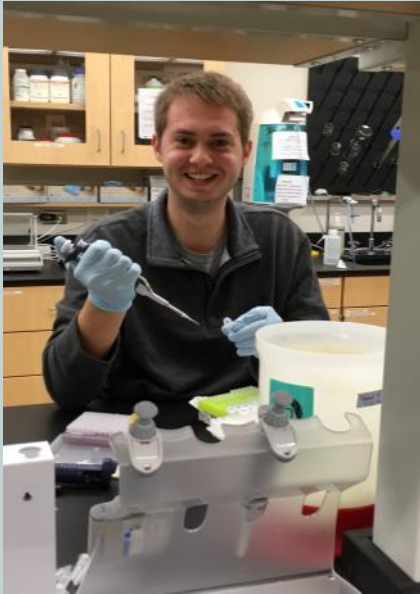
Mentors: Dr. Jay Lennon and Venus Kuo, Dept. of Biology

REU participants visited the Indianapolis Zoo and the Exotic Feline Rescue Center. Pictured here are REU students at the Simon Skjodt International Orangutan Center in the Indianapolis Zoo.



REU Students in CISAB Mechanisms of Behavior Lab

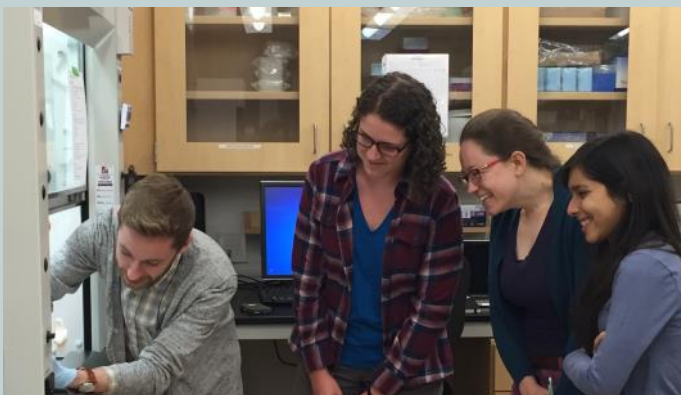
This summer, two REU participants made extensive use of the CISAB Mechanisms of Behavior Lab.



Aidan Geissler studied the effects of testosterone on longevity in Dark-eyed Juncos (*Junco hyemalis*) for his 10-week REU project. Aidan tested whether testosterone implants increased the probability that these common North American songbirds would become infected with haemosporidian parasites, and whether haemosporidian parasite infections increased the rate of degradation of telomeres in juncos. Aidan assessed the presence or absence of haemosporidian parasite infections in the CISAB lab by running a polymerase chain reaction (PCR) and gel electrophoresis to amplify and visualize the haemosporidian parasite cytochrome B gene. According to Sam Slowinski, his grad student mentor, **“the CISAB lab was instrumental to this work by providing workspace and equipment for Aidan to run the PCRs and gels, and because Christy helped us to optimize our protocol and to troubleshoot whenever the PCRs or gels weren't working.”**

The NSF-funded REU internship program, in the second summer of its most recent renewal, had a successful summer. Students completed projects in the Biology, Psychology, and Cognitive Science programs combining behavioral, computational, endocrinological, molecular, and field approaches, emphasizing the multidisciplinary nature of CISAB.'

-Dr. Laura Hurley , REU Program Director



Ana Gonzales studied the effects of frequent disturbance on the immune system of the Dark-eyed Junco. Ana and her graduate student mentor, Rachel Hanauer, worked with CISAB lab director Christy Bergeon Burns to learn all of the steps involved in measuring gene expression in junco spleens, including extracting RNA from tissues, reverse transcribing the RNA into cDNA samples, and designing quantitative PCR (qPCR) assays to accurately measure the relative abundance of immune genes. Using CISAB reagents made the

project much more affordable, and the laminar flow hood available in the CISAB Mechanisms of Behavior lab was key to preventing contamination of their assays. Further, Rachel explains that **“working in the shared space brought us into easier contact with other people familiar with our techniques, which was really helpful in troubleshooting.”**

2016 Animal Behavior Conference

CISAB's 23rd annual Animal Behavior Conference continued its tradition of growth and excellence. The Organizing Committee, made up entirely of students and trainees, with assistance from our expert staff, as always did a wonderful job of bringing all of the pieces together seamlessly.

The conference was attended by 224 participants, from undergraduates to senior faculty members, from 13 states and Canada and 38 universities. Forty-seven posters were presented at the Thursday night session, and 20 talks were given by students and postdocs Friday. Dr. Allison S. Fleming of University of Toronto (*right*), Mississauga gave an entertaining and informative keynote address on the neuropsychological underpinnings of mothering and the effects of early experience on maternal behavior. Organized by Tierney Lorenz, Saturday's highly interactive symposium, *Changing Paradigms in Animal Behavior*, culminated in a keynote address by this year's CISAB Exemplar awardee, our own Greg Demas (see following page).



Save the Date! 2017's Animal Behavior Conference is April 7-8 at the Monroe County Convention Center, in Bloomington IN. Keynote speakers are Elizabeth Adkins-Regan of Cornell University, and our own Laura Hurley.

2016 Animal Behavior Conference: Awards



2016 Undergraduate Poster Presentation Awards

Left to Right: Haley Nichols, Hannah Jarvis, Bridgette McCormick

Bridgette McCormick, Indiana University, won first place with her poster titled **Behavioral and Electrophysiological Changes in the Q175 Mouse Model of Huntington's Disease Following Administration of AAV9-GLT1.**

Hannah Jarvis, Indiana University, received second place with her poster titled **Visual Resolution of Two Species of *Sceloporus* Lizards that differ in Ventral Coloration.**

Haley Nichols, Illinois State University, took third place with her poster: **Seasonal Variation in the Production of Behavioral Types in *Trachemys Scripta.***

2016 Animal Behavior Conference: Awards

Exemplar Award 2016 Award: Dr. Greg Demas



Professor Demas is a superb scientist and one of the founders of the field of ecoimmunology. He takes an integrative approach to the study of seasonality, aggression, sickness behavior, and reproduction in an astonishing breadth of species. In addition to playing an instrumental role in developing our undergraduate Animal Behavior major, Greg has also mentored many undergraduate and graduate students and postdocs. He served as director of CISAB from 2008-2012, helping our program grow in numerous ways. Greg has been and continues to be an active, engaged, and enthusiastic CISAB citizen, a consummate colleague and collaborator.

Hanna Kolodziejski Award 2016: Jessica Hite

A graduate student in Biology, Jessica studies the implications of host-parasite interactions for infectious disease. Jessica has shown an extraordinary commitment to both service and mentorship, and has found clever ways to fuse science, art, and outreach. For instance, she works extensively with local schools on projects that combine art and natural history to foster children's appreciation for conservation; and she was part of a team that designed and constructed a series of sculptures to increase breeding and roosting habitat for chimney swifts. As her PhD mentor Spencer Hall describes, this project "took immense vision, years of work, strategic team building, fund raising, and a vision for a marriage of science, art, and conservation." Jessica also mentors students in the lab, with a special interest in promoting the involvement of underrepresented groups in science.



Rowland Mentoring Award 2016: Nikki Rendon



As a first-generation college student and Latina from rural New Mexico, Nikki believes a key part of her job as a grad student in Biology is to help others pursue careers in STEM-related fields. Nikki has mentored many undergraduates and high schoolers in the Demas lab. Nikki's excellence in mentorship is serving as a great recruiting tool for IU: One of her high-school mentees is now enrolled in IU and working with Nikki as an undergraduate research assistant, and one of her REU students subsequently enrolled in graduate school here! Many of her student mentees have presented at national and regional meetings and earned authorships on papers either published or in preparation. As a grad student coordinator for the REU program, she helped to develop a Research Ethics and Professional Development course. Lastly, in collaboration with Laura Hurley and an AP Biology teacher at a local high school, she developed a module integrating inquiry-based learning through research experiment focused on *Drosophila* olfaction.

2016 Animal Behavior Conference: Awards

Goodson Prize for Art in Science 2016

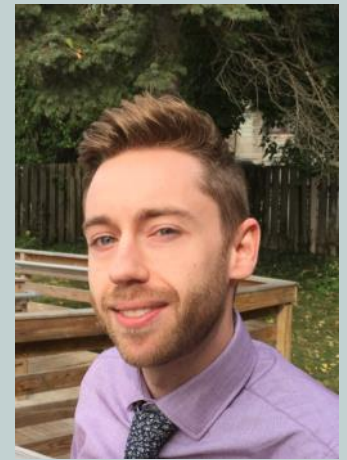


To honor Jim Goodson's memory and his belief in the explanatory power of a compelling scientific image, in 2016 CISAB established the Goodson Prize for Art in Science. The award recognizes outstanding research images that are not just scientifically meaningful but are also beautiful. The first Goodson Prize for Art in Science was awarded to **Dr. Eduardo Zattara**, a postdoc in Armin Moczek's lab, for his image, *Ready to See the Light*, of the central nervous system and eye complex of the late pupa of the dung beetle *Onthophagus sagittarius*. According to Eduardo, females lay eggs inside a custom-built dung brood-ball. After hatching, the larva stays inside the brood-ball and feeds from it until it molts into a pupa and metamorphoses into adult form. During this process, prominent optic lobes grow and extend into the forming compound eyes so that upon adult emergence, the beetle is fully ready to dig itself out of the ground and into an open world of light and color.

2016 Conference Student Exchange Program with North Carolina State's W.M. Keck Center for Behavioral Biology and Georgia's Center for Behavioral Neuroscience

Justin Bollinger attended the Keck Center Symposium.

This year the W.M. Keck Center for Behavioral Biology at North Carolina State University held their 17th Annual Student and Postdoc Symposium on April 29th, 2016. Similar to our own CISAB, the Keck Center values an *integrative* and *interdisciplinary* approach to the study of animal behavior. This was exemplified by the wide range of symposium topics explored – from fundamental genetics, to evolution and ecology, to brain and behavior – and the diverse assortment of model systems investigated, including *Drosophila*, trap-jaw ants, bed bugs, African cichlid fishes, lizards, prairie voles, and wild mice. The Keck Center Symposium was filled with outstanding science and a diverse group of enthusiastic behavioral biologists. For me, being a part of this exchange greatly underscored the importance of collaboration and integration across institutions, and highlighted the multitude of rich backgrounds through which animal behavior can- and should- be approached. I look forward to welcoming the next round of Keck exchange students to the Animal Behavior Conference in 2017, and am exceedingly grateful for the opportunity to have presented my research at such a collegial, engaging event.



Stephanie Campos attended the Keck Center Symposium and CBN's Annual Brains and Behavior Retreat.

As CISAB ambassador to North Carolina State University's Keck Center Symposium, I enjoyed a day of graduate student research presentations, and shared my own research on composition of chemical signals in *Sceloporus* lizards. I was surprised by the abundance of talks on the behavioral and genetic correlates of cuticular hydrocarbons (CHCs) in study systems quite different from those at IU, such as the fascinating trap-jaw ants. Lauren Dembeck, this year's recipient of the Robert and Margaret Grossfeld Award, is a sharp young woman with whom I discussed our mutual passion for chemical communication. She shared her work on the genetic basis of individual variation in *D. melanogaster* CHCs. Keck Center Director Robert Anholt is a remarkably pleasant man, and could not thank us enough for our participation throughout the symposium. Many graduate students were instrumental in hosting, entertaining, and transporting us during our visit, including Grace Parker, Desiree Unsel, and Jamie Mankiewicz. I am grateful to CISAB for this rejuvenating experience, allowing me to foster professional connections and learn about intriguing behavioral research going on outside of IU.

Many thanks to the Keck Center and CBN Student Ambassadors to the 2016 Animal Behavior Conference

Alexandra Castillo-Ruiz
Georgia State University

Ryan Brady
Emory University

Kiara Vann
Moorehouse School of
Medicine

Jaime Willett
North Carolina State
University

Leslie Wilson
North Carolina State
University



At Georgia State University's (GSU) Center for Behavioral Neuroscience (CBN) for the Annual Brains and Behavior Retreat, I discovered a truly inspiring community of researchers supported by a strong foundation of mutual respect for one another, much like at IU. Graduate students and faculty expressed a genuine interest in welcoming us at every opportunity. Immediately upon arrival, our hosts entertained our questions about their program, research, and campus before reciprocating our curiosity by asking about our research, CISAB, and IU. We attended a PhD defense on epigenetic changes involved in social stress while indulging in breakfast delights. I shared a poster of my research to a diverse group, received thoughtful feedback, and discussed *Anolis* brains and social interactions with Walt Wilczynski. My host, Kat, was remarkably prepared when my propensity for dropping poster tubes into murky puddles was exposed at last. Kat provided me with a brief tour of

campus, CBN labs, and downtown Atlanta, then offered me a cappuccino and equally stimulating conversation. Will and I were honored with recognition before an afternoon of dissertation talks followed by keynote Andrew Miller's talk on the link between immunity and depression. I am grateful to CISAB and CBN for this unique opportunity that instilled within me the hope that when I leave Bloomington, I will find other like-minded communities of ethologists rivaling IU in their passion for collaborative and integrative research.

Will Kenkel attended the CBN retreat.

I would like to thank the CISAB Conference Student Exchange Program for a most excellent trip to Atlanta, GA, where I was able to attend the annual Brains and Behavior spring retreat at Georgia State University. We were met at the airport Thursday night by Alexandra Castillo-Ruiz, whom I had first met when she came to Bloomington for our Animal Behavior Conference as part of the same student exchange program. It was through that initial meeting that I learned of her lab's work on an area very close to my own interests, which motivated me to travel to the Brains and Behavior retreat soon after. This trip to Atlanta allowed for reciprocation and greater forging of a bond between our two labs, as I spent Friday morning meeting with her lab and P.I., a researcher whose work I have followed for some time. Overall, the faculty at GSU are very strong and well-represented in my area, and I was quite glad to have the chance to present my work to them at the afternoon poster session. The trip's other highlights included dinner with GSU grad students / postdoc (Katie, Ricardo, John and Alexandra) Thursday night, a very engaging dissertation defense Friday morning that was close to my research interests, and some compelling and diverse talks as part of the retreat. The keynote speaker was a psychiatrist from Emory who spoke on inflammation in depression, and did an excellent job highlighting several recent discoveries in the field. All in all, it was a very enjoyable and professionally fulfilling trip that left me with a very good impression of Atlanta and the GSU research community.



2016-2017 CISAB Fellowships

Mikus Abolins –Abols
Allison Bailey
Jesualdo Gonzales
Leah Wilson
Shane Zappetini

*2017-2018 CTRD & CISAB Fellowships
Application Deadline: February 15th, 2017*

2016 CISAB Undergraduate Summer Scholarship Recipients

Austin Schlenz
Anna Sernau

*2017-2018 Undergraduate Summer Scholarship
Application Deadline: March 1, 2017*

Undergraduate Anna Sernau Uses Summer Scholarships to Study Orangutans

My Animal Behavior honors thesis project involved designing and testing a comprehensive orangutan welfare assessment index. The P-Well, short for “Pongo Welfare Assessment,” is founded on the major welfare principles of good feeding, good housing, good health, and appropriate behavior. These four major principles are divided into eleven criterion which are further divided into 56 measures developed from observation, literature review, and consultation with experts in the field. The test implements both resource-based and animal-based measures to ensure that actual animal welfare, not merely the potential for welfare, is assessed. Following the index’s creation, it was tested for viability with 14 orangutans at two locations – the Woodland Park Zoo in Seattle, Washington and the Indianapolis Zoo in Indianapolis, Indiana. The results of this study indicate that the P-Well serves as a useful assessment of welfare and is able to identify key areas that require improvement. I will present my findings at the Midwest Primate Interest Group Conference in late October, and plan to publish early next year. This research was made possible thanks in part to a grant from CISAB, as well as the guidance and support of CISAB faculty Dr. Robert Shumaker, Dr. Tom Schoenemann, and Dr. Kevin Hunt.



CTRD Welcomes New Round of Trainees

2016-17 Pre-doctoral Trainees



Stephanie Campos



Rachel Hanauer



Sam Slowinski



Kristyn Sylvia

The NIH training grant, Common Themes in Reproductive Diversity (CTRD), is entering its third 5-years of support from the NIH Child Health and Human Development program. CTRD supports research on sexual reproduction, immuno-ecology, stress, aggression, maternal effects and the evolution of human and animal behavior. Trainees meet monthly for breakfast and participate in ethics training and career development. The trainees are always excellent and the learning atmosphere is open and highly interdisciplinary. CISAB is our intellectual home and we feel quite fortunate for its support.

- CTRD Director Ellen Ketterson

2016-17 Postdoctoral Trainees



Courtney Fitzpatrick, left, comes to us from Duke University and is working with Dr. Mike Wade.

Kelly Ronald, right, obtained her PhD at Purdue University and is working with Dr. Laura Hurley



Welcome New CISAB Faculty!

Eduardo J. Izquierdo

School of Informatics and Computing, Programs in Neuroscience, Complex Systems, and Cognitive Science

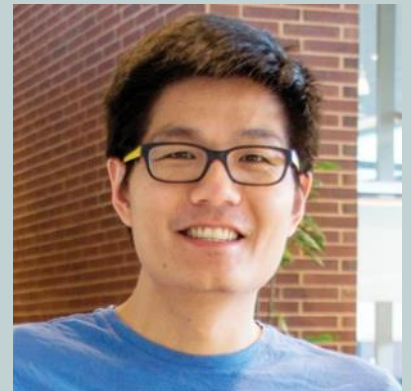
An Assistant Professor in the School of Informatics and Computing, Eduardo's research interest is in understanding the neural basis of behavior, as it arises from the interaction between the organism's nervous system, its body, and its environment. He combines connectome graph analysis, neural network simulations, evolutionary algorithms for optimization, taking into account experimental observations, and mathematical analysis, including information theory and dynamical systems theory, to generate and understand complete brain-body-environment models of simple but biologically and cognitively interesting behaviors.



Patrick C. Shih

School of Informatics and Computing

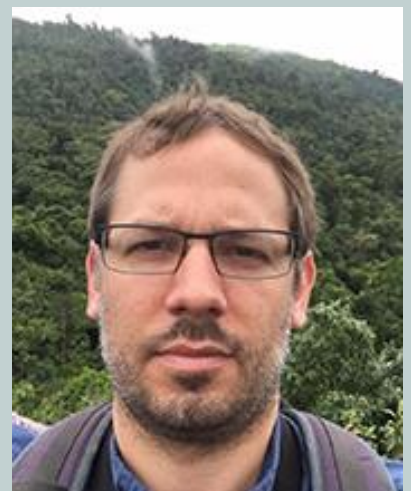
Patrick is an Assistant Professor. His research involves developing technologies for animal wellness, monitoring, and conservation. Specific interests include activity tracking of companion dogs in domestic environment, monitoring behavior of Mexican Gray Wolves at San Francisco Zoo using environmental sensors and computer vision algorithms, developing force plates to assess orangutan strength at the Indianapolis Zoo, and tracking bat migrant patterns using RFIDs at Yellowstone National Park



Michael D. Wasserman

Department of Anthropology, Human Biology Program

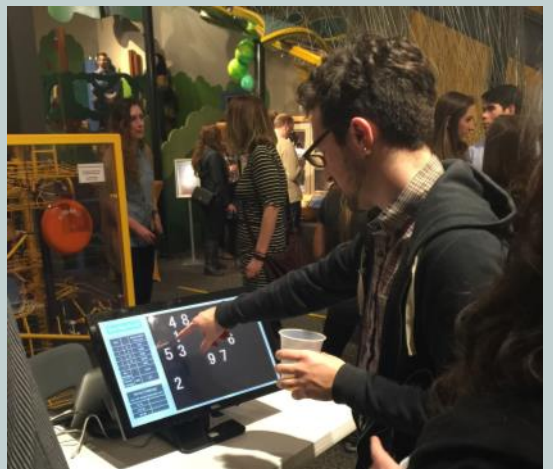
Michael is an Assistant Professor. His research interests are primate ecology and evolution, environmental endocrinology, conservation biology and sustainability, evolutionary medicine and EcoHealth, and nutritional anthropology. Michael's geographical areas of specialization include Uganda, Costa Rica, and Panama.



Community Engagement: CISAB at WonderLab After Dark

CISAB has a long-standing tradition of sending undergraduate interns to help at WonderLab, Bloomington's children's' museum of science, technology, and health. But lately CISAB's faculty and graduate students have gotten in on the action, too. To kick off the opening of their *Your Amazing Brain* exhibit, WonderLab held its first-ever "After Dark" event in February. This one-night event aimed at adults focused on brain and cognition as a theme. CISAB contributed several exhibits to the event.

Dale Sengelaub, who contributed his comparative brain exhibit for *Your Amazing Brain*, was on hand to answer questions about similarities and differences in brain structure and function across a variety of vertebrate species, including dogfish, fence lizard, rat, cat, pigeon, and deer (*top right and below*). Rachel Skipper helped attendees use a microscope to examine neurons in their natural habitat (*middle right*). And Chris Martin let attendees test their attention and working memory abilities against those of a chimpanzee with his "Are You as Smart as a Chimpanzee?" exhibit (spoiler alert: we're not). After watching videotape of a chimpanzee memorizing the order and location of numbers in the blink of an eye, attendees tried the task themselves (*bottom right*).



In Remembrance
Dr. Elaina M. Tuttle
1963-2016



A CISAB alumna, Elaina was Associate Dean and a Professor at Indiana State University. She received her BS from Siena College, her PhD from the University at Albany in Albany, NY, and did postdoctoral research in the laboratory of Ellen Ketterson and Val Nolan at Indiana University, as well as at the University of Chicago. She taught at St. Mary's College of Maryland prior to accepting a faculty position at Indiana State University. Among Elaina's many accolades are the Indiana State University 2006 Promising Scholar Award, the 2009 Outstanding Teacher Award, the Theodore Dreiser Distinguished Research and Community Award, and ISU's highest honor, the Presidential Medal. Her NIH and NSF-funded research program included a 27 year study of white throated sparrows in the Adirondacks and fairy wrens in Australia. Dr. Tuttle also served as Associate Editor for *AUK*. Her service contributions also included co-founding the Center for Genomic Advocacy and Genetic Counseling Program at ISU. In her free time, she enjoyed painting, photography, watching her son play soccer, making Halloween costumes, and listening to music while on relaxing drives.



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