2018

SCHOOL OF INTEGRATIVE BIOLOGY

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN • COLLEGE OF LIBERAL ARTS & SCIENCES

SIB.ILLINOIS.EDU

FROM THE **DIRECTOR**

Dear Friends,

I write this greeting from our newly renovated conference room in the Natural History Building (NHB). For those of you who have not yet had an opportunity to return to campus to tour the building, I hope you will be able to find time soon, it is simply spectacular. The renovation project did an outstanding job of keeping the charm of the late 1800s (the warm feeling created by all the wood and oversized windows) while adding modern conveniences such as central air and state-of-the-art classroom facilities. We just completed our first semester using these new classrooms, and you can read more about our experiences in the pages that follow. In addition, the Schools of Integrative Biology and Molecular and Cellular Biology used the Honors Biology Suite to host an Honors Biology program reunion during Homecoming weekend. The event offered networking opportunities with current students and fellow alumni of the program. We also had several other opportunities this fall to showcase NHB, including the Herbert H. and Jean A. Ross Entomology Collections Room, named by Dr. Charles Ross in honor of his parents.

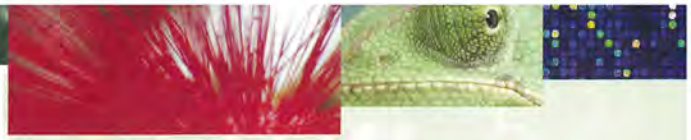
In the last year, we also had a major leadership transition in the School. August marked the end of **Dr. Carol Augspurger's** service as the Associate Director for Academic Affairs. During her 14 years as Associate Director, Carol aligned and strengthened our curriculum, mentored hundreds of undergraduate students, oversaw the renovation of our teaching space in NHB and has been a staunch advocate for transforming undergraduate education. I have benefited immeasurably from her wisdom and experience, and I have no doubt that many of you have as well. Carol is continuing with her research in the Department of Plant Biology, as well as continuing to put all the final touches on NHB. I am pleased to introduce **Dr. Stephen Downie,** professor of plant biology, as the current Associate Director for Academic Affairs. Stephen is extremely dedicated to the education of our students, whether that be in general education courses, courses for our majors, or programs for graduate students. I am thrilled to have the opportunity to work with him to continue advancing our educational mission. Stephen will also remain the Director of the GAANN program for graduate students. Please join me in welcoming Stephen to his new role!

In this issue, we once again introduce our new faculty and celebrate only a small fraction of the accomplishments of our students, faculty, and staff. You can read more about other examples here: sib.illinois.edu/news. Many of these success stories were facilitated by gifts from our alumni and friends, and we are extremely grateful for that support. We always enjoy hearing from our alumni and friends, so when you are next in Champaign-Urbana, please come and visit us in 286 Morrill Hall. You can also learn more by visiting sib.illinois.edu/alumni/mentor/ or contacting our new coordinator of the Alumni Mentoring Program, **Christina Swanson** (sillima2@illinois.edu).

With my best wishes,

Carla E. Cáceres

Director, School of Integrative Biology



FROM THE **DEPARTM**

Andrew Suarez, Head
Department of Animal Biology

"'Small but mighty' aptly describes the Department of Animal Biology, with its uniformly highly engaged faculty."

This quote from our recent departmental external review summarizes my own personal view. While we are a relatively small department, I take great pride in the high quality of our faculty, students, postdocs and affiliates.

This past year we started a new tradition, a monthly Departmental Colloquium that features talks by department members. Over the last two semesters these talks primarily featured faculty and postdocs. The focus will switch to graduate students this coming Spring semester where they will give talks on their current and future research. The colloquium has promoted engagement while educating everyone about ongoing research in the department.

We welcomed two new faculty to the department this year. **Mark Hauber** (www.cowbirds.org) is an ornithologist who studies species recognition in birds that are brood parasites (e.g. cuckoos, cowbirds and whydahs). Mark joined the Department as the Harley Jones Van Cleave Professor of Host-Parasite Interactions. We also welcomed **Charles Roseman** into Animal Biology. Charles' research links genetic and developmental approaches to understand the evolution of complex traits. His academic line was moved from Anthropology to Animal Biology this year, reflecting a change in the focus of his research program.

Where are they now? We are excited to celebrate the success of a number of our students and postdocs who are moving on to new positions in 2017–2018. **Shane Campbell-Staton** (Postdoc in the Catchen Lab) accepted a position as an Assistant Professor at UCLA, and **Kevin Bilyk** (Postdoc in the Cheng Lab) accepted a position as an Assistant Professor at the University of Western Kentucky. Animal Biology Master's students **Michelle St. John** and **Lisa Mitchem** are headed to PhD programs at the University of North Carolina and the University of Virginia, respectively. Master's student **Matt Grobelny** started a job with Accenture Scientific Informatics Services. Finally, PhD student **John Crawford** is a Biology Lecturer and Aquatic Ecologist at the University of Wisconsin-Platteville and **Bill Willis** is an Assistant Professor at DePauw University.

Our students have also been remarkably successful this

SCHOOL OF INTEGRATIVE BIOLOGY
286 Morrill Hall • 505 S. Goodwin Ave. • Urbana, IL 61801 • (217) 333-3044
sib@life.illinois.edu • sib.illinois.edu
"School of Integrative Biology at the University of Illinois"
"Integrative Biology at Illinois"
College of Liberal Arts & Sciences

:NT HEADS

The Department of Entomology and the School of Integrative Biology gratefully recognize Dr. Charles Alexander Ross and his wife Dr. June Ross, son and daughter-in-law of Herbert and Jean Ross, for their generous gift, enabling us to name the room housing the teaching collection in honor of the brilliant systematist who so generously shared his passion and wisdom with generations of students.

past year at receiving grants in support of their research. For example, **Lynette Strickland** received a Smithsonian Tropical Research Fellowship for her research in Panama. **Miles Bensky, Selina Ruzi, Tara Stewart** and **Rachel Moran** (PEEC students in Animal Biology labs) all received NSF Doctoral Dissertation Improvement Grants in the last year they were offered.

Interested in keeping up with Departmental accomplishments and events? Follow us on Twitter (@UIUCAnimalBio @AndrewVSuarez)

James Dalling, Head
Department of Plant Biology

This has been an exciting year in Plant Biology. Our faculty member Prof. **Carol Augspurger** completed the extraordinary work she has done over the last three years, guiding the renovation process in the Natural History Building through countless meetings with architects, contractors and university staff and faculty, to provide us with outstanding instructional space for the school. Carol deserves a break from these exertions, and we are delighted that Prof. **Stephen Downie** has agreed to succeed Carol as the new Associate Director of Academic Affairs, overseeing the teaching mission of the school.

This year we can also celebrate some outstanding faculty awards. Prof. **Don Ort** has been elected to the National Academy of Sciences, Prof. **Steve Long** has been appointed as the Newton Abraham University Visiting Professor at Oxford University, and Prof. **Andrew Leakey** has been appointed a University Scholar, the highest recognition for research, teaching and service on our campus.

Research in our department, particularly addressing the twin grand challenges of ensuring food security and developing fossil fuel alternatives, has also been rewarded with large grants. Following last year's breakthrough discovery published in Science, showing a large boost to crop yield by modifying plants photosynthetic response to sun and shade, Prof. **Steve Long** and Prof. **Don Ort** received a five-year renewal from the Gates Foundation of their RIPE project. The objectives of this international project headquartered at Illinois are to increase yields of staple food crops in developing countries by engineering increases in photosynthetic efficiency.

Another new initiative, led by Prof. **Evan Delucia**, will see the development of CABBI–a Department of Energy Center for Advanced Bioenergy and Bioproducts Innovation arrive on our campus. The CABBI grant will integrate research efforts engineering biomass and bioenergy production, microbial bioconversion to high-value chemicals, while developing sustainable and resilient bioenergy economies. It is notable that several of the department's Assistant Professors–**Wendy Yang**, **Amy Marshall-Colon**, and **Li-Qing Chen** will play key roles in this new research center.

Photo by Kathryn Faith of IGB

May Berenbaum, Head
Department of Entomology

The year 2017 wasn't quite as eventful as 2016 (which featured the 25th International Congress of Entomology in Orlando, the largest gathering of entomologists in history), but for us there was much to celebrate. The biggest news is that we recruited a new faculty member–**Adam Dolezal** joined our faculty as an assistant professor on November 1, 2017. Adam is a 2006 UIUC SIB alumnus; he received his PhD in Biology from Arizona State and then went to Iowa State for a postdoctoral position with Amy Toth, a 2006 PhD UIUC alumna with **Gene Robinson**. Adam is interested in how environmental stressors, including food quality, pathogens, and pesticides, affect the health of managed and wild bees. Also joining our ranks is **Esther Ngumbi**, arriving spring 2018 as an Ethnic Studies DRIVE postdoctoral scholar, holding an appointment split between Entomology and African-American Studies. Esther is an applied chemical ecologist using natural products for sustainable pest management. In addition, she has a deep commitment to STEM education for underrepresented communities and will serve on the 2018 Chicago Council on Global Affairs to discuss empowerment of girls in rural communities. Also enriching our graduate program are recent hires at allied campus units: Tommy McElrath, new curator and collections manager for the Illinois Natural History Survey, Christopher Stone, mosquito biologist at the INHS Medical Entomology Laboratory, and Nicholas Seiter in Crop Sciences.

Ecologists among SIB alumni are familiar with the concept of dynamic equilibrium; as Adam, Esther, and new affiliates join our ranks, others have departed. **Allison Hansen** left UIUC to become a UC-Riverside assistant professor, and **Lee Solter**, UIUC alumna and longtime insect pathologist (and recent Interim Director) at INHS, retired effective December 2017. Sadly, we also lost emeritus professor Stanley Friedman, who died on June 16, at the age of 91. Stanley was our department head from 1976 to 1992 and significantly strengthened our program with strategic hires, major research resources, and sage counsel for many cohorts of faculty and students.

As for service, faculty representation on editorial boards is also in dynamic equilibrium–**Gene Robinson** and I stepped down from the editorial committee of the *Annual Review of Entomology* while **Sydney Cameron** and **Jim Whitfield** became co-founding editors of ESA's *Insect Systematics and Biodiversity*. Also nationally, as I ended my term as Past President of the Entomological Society of America in November 2017, **M Alleyne** began her term on the Governing Board. The 2017 Founders Memorial Lecturer in November was UIUC PhD alumna Carol Anelli; another alumna providing high-profile service to entomology is **Michelle Duennes**, 2015 PhD, currently an ESA Science Policy Fellow.

Faculty research in 2016–17 has supported grants from an alphabet soup of agencies–DoD, EPA, FFAR, NIH, NSF, USDA, USAID, and even ABC (the Almond Board of California, that is). As for teaching, some new courses are now offered, including an online Insect Pathology course and a course on Critical Evaluation of Herbal Medicine. Faculty and students, as usual, were consistently well-represented on the List of Teachers Rated Excellent by their Students and our Individual Plan of Study in Entomology continues to attract undergraduates with a passion for entomology (or, in the case of one student, arachnology). In 2016-17, 15 students received prizes, awards, and/or fellowships from a remarkable diversity of external sources, ranging from the National Science Foundation to the National Speleological Society–evidence that you never know where arthropods will take you!

DEPARTMENTS AND PROGRAMS

DEPARTMENTS

- Department of Animal Biology
- Department of Entomology
- Department of Plant Biology

UNDERGRADUATE PROGRAMS

- Integrative Biology
- Integrative Biology Honors
- IPS–Entomology
- Teaching of Biology

GRADUATE PROGRAMS

- Animal Biology
- Entomology
- Plant Biology
- Program in Ecology, Evolution & Conservation Biology (PEEC)
- Online Master of Science Teaching Biology Program

SIB BY THE NUMBERS

FACULTY (2017)

Professors	22
Assoc. Professors	11
Asst. Professors	11

STUDENTS (2017)

Undergraduate Students–392 total

Out-of-state	6%
International	3%

Graduate Students–144 total

AB	19
Ento	36
PB	36
PEEC	38
OMST	27

DEGREES AWARDED

Bachelor of Science	142
Master of Science	23
Doctor of Philosophy	6

FUNDED RESEARCH

The following numbers are as of 8/31/17

NSF	$15,987,444
USDA	$2,891,157
NIH	$1,593,458
Dept of Energy	$998,564
Dept of Education	$393,824
DOD	$1,013,363
USAID	$3,076,332
Misc Federal	$54,495
Private	$1,945,234
Total	**$27,953,871**

Delcomyn Award Recipients

Congratulations to **Alicia Gomez** and **Manuel Perez**, the first two recipients of the Delcomyn International Study in Biology Award! The award was established by Dr. Fred Delcomyn and Nancy A. Delcomyn to benefit undergraduate students majoring in Integrative Biology who wish to take advantage of educational opportunities in biology outside the United States and Canada. Alicia and Manuel received the award to participate in a study abroad course led by Dr. Brian Allan to the Commonwealth of the Bahamas, where they will learn marine ecology and conservation and the challenges to sustaining the environment. The course, entitled *Sustainability in the Bahamas*, addresses environmental topics and their intersection with economic development, cultural practices, and tourism. Alicia and Manuel will be traveling to Eleuthera, Bahamas, and staying at the Cape Eleuthera Institute, a renowned marine research laboratory with a strong connection to research activities at the University of Illinois. Congratulations to the first two IB majors to receive the Delcomyn award!

"Endangered Wild Dogs" –Alexandra Harmon-Threatt
1st place | Nature Category | SIB Photo Competition

IN MEMORIAM

Stanley Friedman–A Life in Science

The Department of Entomology hosted a memorial on September 18, 2017, in honor of Stanley Friedman (December 11, 1925–June 16, 2017). Stanley was a research associate here for 3.5 years from 1952–1956. He then returned as a faculty member from 1964–1992 and was an integral part of the Department providing a warm, wise anchor for students, faculty, and staff for some 28 years. During his 17-year tenure as Head, he successfully steered the Department through challenges to the organization and future of the Department, and also served as Acting Director of the

School of Life Sciences during difficult times. Stanley regarded the education of students who have gone on to significant careers, and in particular the hiring of a series of faculty who are responsible for the current high ranking of the Department, as the crown jewels of his career. Yet Stanley was also a scientist who did much important work in insect physiology, including work on sugar metabolism in insects, vitamins, and dietary self-selection.

On September 18, 2017, expressions of appreciation of Stanley Friedman from current and past faculty and students as well as family members and others in attendance were portrayed during a memorial service and reception in his honor in the Charles G. Miller Auditorium (B102 Chemical and Life Sciences Building). For complete article: go.illinois.edu/Friedman

Alumni Mentor Program

As a part of our growing IB community, we would love to hear about your post-graduation experiences–as do our current students!

Our new Alumni Mentoring Program utilizes the collective experiences of our alumni to inspire, empower, and guide our current students, fostering career success in the process. We want to showcase the variety of disciplines, industries, and careers that our IB graduates are currently exploring to help orient our current students in their own career journeys. Wherever you are in your journey, our students would benefit from hearing from your story and your unique set of experiences.

There are many different ways to collaborate, broken down by level of investment so you can select what works best for *you*. We can use as much or as little time as you have. Sharing something as seemingly simple as your job title will help our students to understand what positions are available for IB grads—information they can't get elsewhere. By completing the Alumni Profile Survey, in just a few minutes you can open up a world of possibilities for our students.

If you want to learn more about how to start your profile or how to get involved with the Alumni Mentoring Program, you can visit our website at: sib.illinois.edu/alumni/mentor/ or contact **Christina Swanson** at sillima2@illinois.edu

Jean Frazier Patterson, long-time UIUC employee (1973–96) and departmental secretary for Ecology, Ethology and Evolution passed away December 9, 2017. Jean served as departmental secretary through a number of Department Head changes. She remained the continuing thread for departmental functioning during these changes. She is remembered by faculty as the epitome of professionalism. She was always johnny-on-the-spot about getting things done and knew the rules and regulations of the University like no one else. She was always kind and respectful, yet she commanded a presence that made us all tow the line in the department. Memorials: Episcopal Relief and Development. Complete obituary: news-gazette.com/obituaries/2017-12-17/jean-patterson.html.

"A 15 million year old fossil palm," Grimsdalea magnaclavata, Amazonas –Ingrid Carolina Romero, Carlos D'Apolito and Michael Urban
3rd place | Biological Imaging Category | SIB Photo Competition

New NHB iFLEX spaces strengthen SIB's teaching mission

Starting with the Fall 2017 semester, the SIB teaching spaces have returned to the newly renovated Natural History Building. In addition to the many modern teaching laboratories, the new teaching spaces include the University's newest (and in the case of 2020 NHB the largest) iFLEX rooms that promise to transform the way SIB prepares the next generation of leaders in the life sciences on this campus. The new NHB iFLEX rooms permit configurations for class sizes of 30, 45, 60, and 90 students and dramatically expand SIB's spaces for modern team- and project-based learning environments that promote deep understanding, hone transferable skills, and foster innovation.

iFLEX spaces provide an exhilarating teaching and learning experience. It becomes immediately apparent when entering one of these rooms that the space forces instructors and students to adopt a new, interactive approach to both teaching and learning. Collaborative student groups at round tables are at the heart of the learning experience in these spaces.

One effective teaching approach in these spaces is to reduce the instructor-directed portions to short mini-lectures to set-up a topic, and allow students to explore and apply the introduced concepts themselves in a guided learning environment using problem sets or case studies. On the advanced end, the spaces enable a fully transformed learning environment focused on discovery-driven semester projects, with content introduced or gathered by students on a need-to-know basis that mimics a truly collaborative research environment.

The success of these iFLEX spaces is highlighted by the experience in IB 150, SIB's flagship introductory course for biology majors. Starting with the Spring 2017 semester, this course has been offered as two parallel lecture sections. Section AL1 is offered in the largest lecture halls on campus (Foellinger Hall and the Lincoln Hall Theater) to 500–600 students, while section AL2 is offered in the 90-seat iFLEX configuration of 2020 NHB to our Merit and AAP scholars. Students in the AL2 section report significantly higher satisfaction compared to section AL1, and point to the active, hands-on learning environment as their favorite components of this course offering. Improvements in exam performance by 6.5 percentage points underscore the success of the active engagement enabled by the new iFLEX spaces. This effect is most pronounced for students with lower incoming Math ACT scores, and nearly closes performance gaps among students from at-risk demographic backgrounds.

In conclusion, the upfront investment in redesigning a course to enable content mastery in an interactive learning environment more than pays off in student satisfaction, learning gains, and aiding students in the development of important transferable skills by creating an experience that mimics the work of a real-world research team.

FACULTY PROMOTIONS

LISA AINSWORTH

Dr. **Lisa Ainsworth** joined the Department of Plant Biology as an assistant professor in January, 2005. In August of 2011, Dr. Ainsworth was promoted to associate professor and in August of 2017 to full professor. Research in the Ainsworth Lab applies physiological, biochemical and genomic tools to understand the mechanisms of plant responses to global climate change. Current research in the Ainsworth lab investigates genetic variation in response to rising atmospheric carbon dioxide and ozone concentrations in soybean and maize and tests transgenic targets for improving crop responses to future atmospheric conditions. Lisa serves as an editor for *Plant Physiology* and *Plant, Cell & Environment*, the chair of the AAAS Agriculture, Food and Renewable Resources Section, and was listed on the Thomson Reuters/Clarivate Analytics Highly Cited Researchers List last year. To learn more, visit: lab.igb.illinois.edu/ainsworth/

KATY HEATH

Dr. **Katy Heath** joined the Department of Plant Biology as an assistant professor in December, 2009. This past August, 2017 Dr. Heath was promoted to associate professor. The Heath Lab is working on a number of questions in evolutionary genetics using plants, bacteria, and fungi. Ongoing work on the legume-rhizobium symbiosis aims to uncover the mechanistic basis of mutualism variation in nature, including variation in the benefits potential partners provide and variation in which hosts interact with which symbionts. Recent work has investigated the evolutionary responses of nitrogen-fixing rhizobia in response to nitrogen deposition and the genomic basis of these responses. Collaborative work with researchers at U of I and elsewhere focuses on fungal community composition and integrating phylogeography with adaptation using genomic data. To learn more, visit: life.illinois.edu/heath/Heath_Lab/RESEARCH.html

"Storm front, take a break"
–Darshi Banan
1st place | Biologists at Work Category | SIB Photo Competition

NEW FACULTY

LILY ARIAS

I am originally from Lima, Peru. I received my master's and doctoral degrees in Biology from Texas Tech University and Indiana State University respectively. I have held faculty positions at Temple University, SUNY College at Old Westbury, and Tougaloo College in Mississippi. During my time as faculty, I have taught classes such as General Biology, Ecology, Evolution, and Diversity, and online classes. In addition to biology, I am very interested in the field of Science Education. Thus, I have tried active learning pedagogies such as the flipped classroom model, cooperative learning, and the practice of activities that foster critical thinking skills in students. At the University of Illinois at Urbana-Champaign I am the Director of the SIB Merit Program, Lecturer for SIB courses, collaborating in the Organismal and Evolutionary Biology course, and coordinating the lab portion of Animal Biology. I am excited to be part of the School of Integrative Biology and look forward to what the future brings.

ADAM DOLEZAL

I am excited to join the Department of Entomology in the Fall of 2017. I was born and raised in Southwestern Illinois and am an undergraduate alumnus of the UIUC School of Integrative Biology, so this very much feels like a homecoming for me. The ability to also join such a dynamic group of faculty makes me feel particularly fortunate.

After finishing my bachelors in IB from UIUC, I moved to Tempe, Arizona to complete my Ph.D. research with Gro Amdam and Bert Hoelldobler at Arizona State University. At ASU, I was lucky to be immersed in many aspects of social insect biology as part of the then newly-established Social Insect Research Group. My doctoral research was primarily on how reproductive physiology (focusing on hormones and ovarian development) could regulate ant division of labor. At the same time, I was able to work on several other projects, particularly with honey bees. By the time I finished by Ph.D., I'd developed an interest in expanding my research into emerging issues in agriculture. Since I had worked with social insects, it was a logical choice to focus on honey bee health.

From ASU, I moved on to do postdoc work in Amy Toth's lab at Iowa State University. At the time, her lab was really one of the only ones at ISU working with social insects. So it was an interesting change for me to move to a place where I wasn't as surrounded by people working on the same systems as me. In particular, I was really excited to be more exposed to entomological research with a focus

NEW FACULTY, CONTINUED

on agriculture, which ISU unsurprisingly does a lot of. At the same time, I was able to gain some exposure to applying genomic resources to my research. I also had the privilege of collaborating with a diverse group of researchers including virologists, ecologists, and applied entomologists, including Matthew O'Neal and Bryony Bonning. During my time there, I worked on many projects surrounding honey bee health, most focusing on the interaction of virus infection and nutritional deprivation due to agricultural intensification. This experience provided me with some diverse viewpoints to studying honey bee health, particularly in the context of conventional Midwestern agricultural producing.

In the UIUC Department of Entomology, I am excited to build a lab that will continue to address these questions by integrating approaches in ecology and physiology to better understand how honey bees and other pollinators are affected by the environmental stressors they are exposed to in increasingly transformed landscapes.

MARK HAUBER

As a behavioral ecologist and ornithologist, I have been looking forward to finally joining the Department of Animal Biology in the School of Integrative Biology at Illinois for the past two years. Ever since my first visit here ~15 years ago, I've always kept an eye out on the incredible productivity, originality, and the impact that this department and school have generated in my broad research fields. With the support of the Harley Jones Van Cleave Professorship in Host-Parasite Interactions, I hope to contribute to all this work with my own expertise in avian brood parasitism, host-parasite coevolution, and social recognition systems.

Joining Illinois also represents my return to a full time research, teaching, and mentoring position after a 4-year exciting foray into the field of academic research administration, as associate provost and associate vice chancellor for research, respectively, at Hunter College and the City University of New York system. Previously, I was Professor in the Department of Psychology's Program in Animal Behavior and Conservation at Hunter College. I had moved to New York after a 5-year faculty appointment in Biological Sciences at the University of Auckland, New Zealand. Prior to that I completed a Miller Postdoctoral Fellowship in Integrative Biology and Psychology at UC Berkeley, a PhD in Neurobiology and Behavior at Cornell University, and a Bachelor's in Organismal Biology at Yale University.

I pride myself in being able to identify and work with an incredible set of students, postdocs, and faculty as collaborators in our interdisciplinary studies. Shifting gears between behavioral, developmental, physiological, and molecular tools, my lab (www.cowbirdlab.org) is studying the social and genetic consequences of species recognition in avian brood parasites, such as cuckoos, cowbirds, and whydahs, and their hosts. This work is currently funded by an NSF/IOS grant and its outputs are often tweeted @cowbirdlab. Obligate brood parasitism in birds provides an exciting model system for the evolution of social behaviors because, unlike 99% of bird species, they lay their eggs into nests of other species and are reared by foster parents. Several other projects in the lab also tap into national and international collaborations throughout the world of birds, including the unique and often endangered sea- and shorebird fauna of New Zealand. The most recent outputs of the Hauber lab (@cowbirdlab on Twitter) now here at UIUC are a test of the photo activated antimicrobial properties of eggshell pigments (hypothesis rejected; published in Ecology & Evolution 2017 October online) and a commentary on the fitness costs of teaching avian embryos in the wild (they are real; published in Behavioral Ecology 2017 October online).

TEACHING AWARDS

Thomas Frazzetta Awards for Outstanding Teaching in Animal Biology

Lisa Mitchem
Michelle St. John

Award for Outstanding Teaching in Plant Biology

Daniel Raudabaugh

John G. & Evelyn Hartman Heiligenstein Outstanding Teaching Assistants

Charles Dean
Brenna Decker
Kyle Parks

Teachers Ranked Excellent

by Their Students for Integrative Biology Courses Taught in Fall 2016, Spring and Summer 2017

Brian Allan
Nicholas Anderson
Alyssa Beck
Alison Bell
May Berenbaum
Zachary Boehmke
Daniel Bush
Carla Cáceres
Setu Chakrabarty
Ben Clegg
Mark Davis
Charles Dean
Natalie Diesel
Alexandra Ford
Becky Fuller
Sarah Giers
Mateusz Grobelny
Sam Halsey
Alex Harmon-Threatt
Derek Haselhorst
Alexander Hazel
Cody Jones
Jennifer Jones
Ethan Kessler
DoHyup Kim
Kelsey Low
Alex Luro
Joshua Mesa
Lisa Mitchem
Rachel Moran
Sean Mullahy
Julie Nguyen
Ken Paige
Allison Parker
Kyle Parks
Tolulope Perrin-Stowe
Henry Pollock
Jennifer Quebedeaux
Daniel Raudabaugh
Tyler Refsland
Selina Ruzi
Karen Sears
Tara Stewart
Lynette Strickland
Andy Suarez
Nicholas Sutton
Margaret Thairu
Erin Updyke
Will Wadlington
Hannah Wahl
Dalon White
Kelsey Witt
Michael Wong

FACULTY AWARDS

Ecological Society of America announces 2017 Fellows

Feng Sheng Hu, Department of Plant Biology has been elected in 2017 in recognition for paradigm-shifting research in paleoecology and important contributions to understanding climate change and ecological impacts, particularly in arctic and boreal regions. For complete article: go.illinois.edu/HuESA

The College of Liberal Arts & Sciences Teaching Excellence Awards

LAS announced their 2017 Award Recipients and **Andrew Suarez**, Department of Animal Biology received the Dean's Award for Excellence in Undergraduate Teaching. For complete award listing: go.illinois.edu/LASAwards. Dr. Suarez also received the Campus Award for Excellence in Undergraduate Teaching.

Four Illinois Professors Elected to National Academy of Sciences

Don Ort, Plant Biology Department has been elected to the National Academy of Sciences, one of the highest professional honors for scientific achievement. The National Academy of Sciences is a private organization of scientists and engineers dedicated to the furtherance of science and its use for general welfare. Founded in 1863, the academy acts as an official adviser to the federal government, upon request, in any matter of science or technology. For complete article: go.illinois.edu/OrtNAS

DOE Funds Major Bioenergy Research Center at Illinois through ISEE, IGB

Energy (DOE) is doubling down on energy research at UIUC, funding a multimillion-dollar Bioenergy Research Center to provide scientific breakthroughs for a new generation of sustainable, cost-effective biofuels and bioproducts. The Center for Advanced Bioenergy and Bioproducts Innovation (CABBI) is a collaboration between Illinois' Institute for Sustainability, Energy, and Environment (iSEE) and the Carl R. Woese Institute for Genomic Biology (IGB), and it will include 17 partner institutions. **Evan DeLucia**, the G. William Arends Professor of Plant Biology and Baum Family Director of iSEE, will serve as CABBI Director. For complete article: go.illinois.edu/Bioenergy

Photo by Kathryn Faith of IGB

Entomologist Honored for Work in Science and Society

Prominent Entomologist **May Berenbaum**, Department of Entomology, has been recognized by the British Ecological Society for her work benefiting the scientific community and society in general. Berenbaum received the Honorary Membership award from the head of the British Ecological Society (BES). It's the society's highest honor, given for exceptional contributions at the international level to the generation, communication, and promotion of ecological knowledge and solutions. She was cited by the BES for her research focusing on chemical interactions between insects and plants, including the detoxification of natural and synthetic chemicals. For complete article: go.illinois.edu/BerenbaumBES

University Scholars Program

Faculty excellence is the cornerstone of any university of high quality. There is no more important task at the University of Illinois than attracting and retaining the very best teachers and scholars. The Faculty Scholar Program aims to recognize outstanding members of the faculty and to provide each with a funding allocation to enhance their scholarly activities. **Andrew Leakey,** Plant Biology Department was among the list of 2017 University Scholars. go.illinois.edu/Scholars17

Two Illinois faculty members elected AAAS Fellows

Two faculty members at the University of Illinois at Urbana-Champaign have been elected 2017 Fellows of the American Association for the Advancement of Science. Animal Biology professor **Carla Cáceres** and statistics professor Douglas Simpson are among 396 people to be awarded the distinction of AAAS Fellow this year. Cáceres studies factors that promote and support biodiversity, including genetics, reproductive and feeding strategies, individual variation and the structure of ecological communities. According to a statement from AAAS, Cáceres is recognized for her "contributions to our understanding of the role of parasites in defining plankton community structure." For complete article: go.illinois.edu/CaceresAAAS

"Ice Needles"
–S. Chakrabarty

FACULTY AWARDS, CONTINUED

Junior faculty highlighted as LEAP Scholars

Wendy Yang, Plant Biology is among the four assistant professors who have been recognized for outstanding teaching and research as part of an ongoing program to spotlight and support promising junior faculty in the College of LAS. They have received the Lincoln Excellence for Assistant Professors (LEAP) Award, which is granted to faculty based on scholarly productivity and contributions to the educational mission of their departments and the college. For complete article: go.illinois.edu/LEAP2017

The Harmon-Threatt lab works on issues of pollinator biology and conservation and had an incredibly productive and successful year. We have grown to include two new graduate students, **Jonathan Tetlie** and **Matthew Safford**, and a new lab assistant, **Katie Barie**. With funding from NSF we began a large scale project examining bee movement in fragmented habitats which took a team of 6 down to Missouri for about a month of sampling. We were also fortunate to receive a USDA award to begin working on pollinator conservation in agriculture which Jonathan Tetlie will be involved in. The graduate students were awarded numerous grants and fellowships to support their diverse projects on pollinators from Prairie Biotic Research, Sigma XI, GAANN fellowships, North Central SARE Award, and Grad College travel awards. A number of new undergraduate students have worked in the lab including **Gaby Murillo**, **Eric Gama**, **Paul Ruiz-Lopez**, **Mary Powley**, **Lorenzo D'Alessio** and **Paulina Rodriguez**. In between all of the hard work we also managed to squeeze in some fun with a trip to an escape room and end of the year lab party.

To support the exciting bee research done by graduate students in entomology please visit sib.illinois.edu/alumni/donations/ and select I-bee research fund.

FACULTY NEWS

[Photos by L. Brian Stauffer]

Rusty patched bumblebee, once common pollinator, added to endangered list

"Every one-in-third bite of food is pollinated by bees. A huge factor is the bumble bee itself," said Prof. **Sydney Cameron**, who teaches entomology. "A lot of our food is dependent upon these bees. If that's not important, I don't know what is," she said. For complete article: go.illinois.edu/RustyBee

Science at Illinois feeds the world, furthers health, protects the planet

Plant Biology professor **Ray Ming** conducted basic research on papaya sexual reproduction and found a way to alter the plants to increase yields of commercially viable fruit. For complete article: go.illinois.edu/MingScience

Alleyne and Wissa Foster Interdisciplinary in New Biomimetics/Bioinspiration Course

Folks in different disciplines, say engineering and biology, often don't know how to talk to each other and, thus, have trouble collaborating. So Aimy Wissa, an Assistant Professor in Mechanical Science and Engineering (MechSE) and **Marianne Alleyne**, a Research Scientist in Integrative Biology's Entomology Department have teamed up to try to change that. They've designed a new biomimetics/bioinspiration course, ME 498/IB496, which seeks to use an advanced design experience to foster an interdisciplinary mindset among students in the course. For complete article: go.illinois.edu/ME498IB496

"Butts Up"
–E. Welsch

Foundation Supports Crops in Silico

The Foundation for Food and Agriculture Research (FFAR) has awarded Principal Investigator **Amy Marshall-Colón**, Assistant Professor of Plant Biology (pictured with Matthew Turk), to continue her research in support of Crops *in silico* (C*is*), a project to develop a suite of virtual plant models that may help resolve a growing gap between food supply and demand in the face of global climate change. For complete article: go.illinois.edu/Marshall-ColonSilico

New grant to study fish genomics, behavior

A new grant through the National Science Foundation's Enabling Discovery through Genomic Tools (EDGE) program promises to expand our knowledge of the three-spined stickleback fish species. Different stickleback populations have evolved very distinct morphological traits, demonstrating a natural diversity that makes them an ideal candidate in which to examine the mechanics of adaptive evolution and ecology. **Alison Bell**, Professor of Animal Biology (pictured with graduate student **Syed Abbas Bukhari**) is a co-PI of this three year award. For complete article: go.illinois.edu/Genomics0717

Study finds parallels between unresponsive honey bees, autism in humans

Honey bees that consistently fail to respond to obvious social cues share something fundamental with autistic humans, researchers report in a new study. Genes most closely associated with autism spectrum disorders in humans are regulated differently in unresponsive honey bees than in their more responsive nest mates, the study found. The new analysis was led by **Gene Robinson**, Department of Entomology (pictured with Michael Saul, postdoctoral researcher). For complete article: go.illinois.edu/BeesAutism

Cicada wings may inspire new surface technologies

Researchers are looking to insects—specifically cicadas—for insight into the design of artificial surfaces with de-icing, self-cleaning and anti-fogging abilities. "Traditionally, the idea would be to collect cicadas that live in wetlands to study wing hydrophobicity," said **Marianne Alleyne,** Entomology Department and a co-lead on this study. Such studies are based on the assumption that wetland-dwelling cicadas have the most water-repellant wings. For complete article: go.illinois.edu/Cicada0817

Lizard blizzard survivors tell story of natural selection

Julian Catchen and **Shane Campbell-Staton** and their colleagues found genetic, regulatory and physiological signatures of natural selection in green anole lizards that survived a bout of extremely cold weather in South Texas. A new study offers a rare view of natural selection in this species, showing how the lizard survivors at the southernmost part of their range in Texas came to be more like their cold-adapted counterparts further north. For complete article: go.illinois.edu/Lizards

FACULTY NEWS, CONTINUED

Scientists discover spring-loaded mechanism in unusual species of trap-jaw ant

Animal Biology Professor **Andrew Suarez** and his colleagues describe the unusual mechanics that enable *Myrmoteras* ant jaws to snap closed in half a millisecond. Researchers reveal how a group of trap-jaw ants can snap their jaws shut at speeds of up to 50 miles per hour—just fast enough to capture their elusive prey. For complete article: go.illinois.edu/SuarezAnts

Future drought will offset benefits of higher CO2 on soybean yields

Climate change will threaten soybeans sooner than expected. Plant Biology Professor, **Andrew Leakey** and colleagues report that soybeans will suffer yield losses sooner than previously predicted under future conditions that combine elevated atmospheric carbon dioxide levels with drought. An eight-year study of soybeans grown outdoors in a carbon dioxide-rich atmosphere like that expected by 2050 has yielded a new and worrisome finding: Higher atmospheric CO2 concentrations will boost plant growth under ideal growing conditions, but drought—expected to worsen as the climate warms and rainfall patterns change—will outweigh those benefits and cause yield losses much sooner than anticipated. For complete article: go.illinois.edu/LeakeyCO2

The time is RIPE to transform agriculture and feed the world

Political and agricultural leaders gathered at the University of Illinois to see transformative work by Realizing Increased Photosynthetic Efficiency (RIPE) that has increased yields by 20 percent. The research project announced that it will continue work to address the global food challenge with the support of a $45 million, five-year reinvestment from the Bill & Melinda Gates Foundation (BMGF), the Foundation for Food and Agriculture Research (FFAR), and the U.K. Department for International Development (DFID). "Today's report on world hunger and nutrition from five UN agencies reinforces our mission to work doggedly to provide new means to eradicate world hunger and malnutrition by 2030 and beyond," said RIPE Director **Stephen Long**, Plant Biology Department and **Don Ort**, also from the Plant Biology Department. For complete article: go.illinois.edu/RIPE17

Click beetles inspire design of self-righting robots

Robots perform many tasks that humans can't or don't want to perform, getting around on intricately designed wheels and limbs. If they tip over, however, they are rendered almost useless. Mechanical engineers and entomologists are looking to click beetles, who can right themselves without the use of their legs, to solve this robotics challenge. "This idea came to life when a group of insect physiology students decided to take a closer look at what makes click beetles jump as part of a class project," said Department of Entomology Research Scientist and study co-author **Marianne Alleyne**. For complete article: go.illinois.edu/Beetles17

Tropical Diversity Takes Root in Relationships between Fungi and Seeds

A team led by Smithsonian scientists in Panama and project investigator, **James Dalling**, Plant Biology Department, exposed a key to understanding tropical tree diversity by studying how fungi interact with seeds that linger in the ground. Despite a smorgasbord of species available to choose from, tropical fungi and seeds are picky about associating with one another. Early pairings with a particular fungus may influence whether a seed survives and also may help explain how tropical forests remain so diverse. Source credit: The Smithsonian Tropical Research Institute. For complete article: go.illinois.edu/STRINews

U.S. Department of Energy grant will fund sorghum research at Illinois

Andrew Leakey, Professor in the Department of Plant Biology, is part of the project, based at the Donald Danforth Plant Science Center, that will expand upon earlier research on green foxtail grass (Setaria viridis) to identify new genes and pathways that contribute to photosynthesis and enhanced water use efficiency. Sorghum, a grass grown worldwide, is a particularly ideal crop to research for solar energy conversion and use of water. This is part of a multi-institutional research project that has received a 5-year, $16 million grant from the U.S. Department of Energy (DOE) to work with sorghum in an effort to optimize photosynthesis and water use efficiency. For more information: sib.illinois.edu/news/69

Exotic bird makes SoFla scene. Its equally exotic sex dance could spell trouble for natives

What's black and white all over, puts on a mesmerizing mating performance and definitely doesn't belong in Florida? A parasitic African songbird that could threaten the state's native birds. In the

last month, three different South Florida birders have spotted pin-tailed whydahs, the first such sightings in decades. The showy bird, with a streaming black tail, flaming orange beak and a mating dance exotic even by Miami standards, lives in Sub-Saharan Africa but can be easily purchased online for less than $100. All three sightings occurred after Hurricane Irma struck South Florida, making it likely the storm played a part in their appearance. **Mark Hauber**, Animal Biology Professor said it's possible Irma blew the whydahs to Florida from Puerto Rico, where they have colonized the U.S. territory. For complete article: go.illinois.edu/HauberBird

Scientists: Expanding Brazilian sugarcane could dent global CO2 emissions

Vastly expanding sugarcane production in Brazil for conversion to ethanol could reduce current global carbon dioxide emissions by as much as 5.6 percent, researchers report in the journal Nature Climate Change. The research relied on a new approach to modeling the precise behavior of sugarcane crops growing in regions that vary in soil composition, temperature, rainfall and numerous other parameters, said **Stephen Long** who led the analysis with an international team that included scientists from the University of Sao Paulo in Brazil. For complete article: go.illinois.edu/LongBrazil

Oxford University Press launches new journal, Insect Systematics and Diversity

Oxford University Press and the Entomological Society of America (ESA) are pleased to announce the launch of a new journal, *Insect Systematics and Diversity* (ISD). With the publication of its first issue on October 25, ISD joins ESA's portfolio of eight other journals. The journal is led by Co-Editors-in-Chief Dr. **Sydney A. Cameron** and Dr. **James B. Whitfield**, both Entomology professors. For complete article: go.illinois.edu/ISD

Magnifying success through expertise, services of Beckman's Microscopy Suite

The Microscopy Suite at the Beckman Institute-part of the Imaging Technology Group-provides some of the tools that assist Entomologist **Marianne Alleyne** with her bioinspired work, some of which involves examining cicadas. "Insects did it first. Can engineers do it better?" That's the title of Marianne Alleyne's blog, a site where this research scientist in entomology shares her work on bioinspiration. It's a topic she describes as studying "how non-entomologists can be inspired by nature in general, and insects in particular, to create new technological innovations." For complete article: go.illinois.edu/BeckMicroSuite

Genomic study explores evolution of gentle 'killer bees' in Puerto Rico

A genomic study of Puerto Rico's Africanized honey bees—which are more docile than other so-called "killer bees"—reveals that they retain most of the genetic traits of their African honey bee ancestors, but that a few regions of their DNA have become more like those of European honey bees. According to the researchers, these changes likely contributed to the bees' rapid evolution toward gentleness in Puerto Rico, a change that occurred within 30 years. "Evolution involves changes in the frequency of gene variants across a population, and that's what we're seeing in Puerto Rico," said **Gene Robinson**, Director of Carl R. Woese Institute for Genomic Biology. "Now we know that these gentle Africanized bees can be genetically distinguished both from other Africanized honey bees and from European honey bees." For complete article: go.illinois.edu/BeesPR

Five Illinois researchers rank among world's most influential

Plant Biology professors **Lisa Ainsworth** and **Stephen Long** are among the five faculty members at UIUC named to the 2017 Clarivate Analytics Highly Cited Researchers list (previously known as the Thomson Reuters Highly Cited Researchers list). The list recognizes "leading researchers in the sciences and social sciences from around the world," according to Clarivate Analytics. It is based on an analysis of journal article publication and citation data, an objective measure of a researcher's influence, from 2005–15. For complete article: go.illinois.edu/ILRES

"Mr. Anemonefish" –R. DeAngelis

GRADUATE STUDENT AWARDS

Lebus Scholar Awards

Joshua Gibson *(Advisor: Andy Suarez)*
Christopher Holmes *(Advisor: Carla Cáceres)*
Tara Stewart *(Advisor: Carla Cáceres)*

Harley J. Van Cleave Research Awards

Miles Bensky *(Advisor: Alison Bell)*
Samantha Capel *(Advisor: Ken Paige)*
Tanya Josek *(Advisor: Marianne Alleyne)*
Rachel Moran *(Advisor: Becky Fuller)*
Jessica Wedow *(Advisor: Lisa Ainsworth)*

Francis M. and Harlie M. Clark Summer Fellowships

Dohyup Kim *(Advisor: Allison Hansen)*
Andrew Sweet *(Advisor: Kevin Johnson)*

Francis M. and Harlie M. Clark Research Support Grants

Nicholas Anderson *(Advisor: Alex Harmon-Threatt)*
Nathalie Baena Bejarano *(Advisor: Sam Heads)*
Samantha Capel *(Advisor: Ken Paige)*
Carl Scott Clem *(Advisor: Alex Harmon-Threatt)*
Joshua Gibson *(Advisor: Andy Suarez)*
Cody Jones *(Advisor: Ken Paige)*
Elise Nishikawa *(Advisor: Jeffrey Brawn)*
Daniel Raudabaugh *(Advisor: Andrew Miller)*
Georgia Seyfried *(Advisor: Wendy Yang)*
Margaret Thairu *(Advisor: Allison Hansen)*
Jessica Wedow *(Advisor: Lisa Ainsworth)*

GAANN Fellowships

Nicholas Anderson *(Advisor: Alex Harmon-Threatt)*
Colby Behrens *(Advisor: Alison Bell)*
Charlie Burroughs *(Advisor: Lisa Ainsworth)*
Samantha Capel *(Advisor: Ken Paige)*
Carl Scott Clem *(Advisor: Alex Harmon-Threatt)*
Evan Doughty *(Advisor: Jon Marcot)*
Kim Drager *(Advisor: Andy Suarez)*
Tanya Josek *(Advisor: Marianne Alleyne)*
Joseph Napier *(Advisor: Feng Sheng Hu)*
Julie Nguyen *(Advisor: Ray Ming)*
Jennifer Quebedeaux *(Advisor: Andrew Leakey)*
Daniel Raudabaugh *(Advisor: Andrew Miller)*
Lynette Strickland *(Advisor: Carla Cáceres)*
Margaret Thairu *(Advisor: Allison Hansen)*

Animal Biology Summer Stipend Awards

Kim Drager *(Advisor: Andy Suarez)*
Michael Grispo *(Advisor: Chris Cheng)*
Joshua Miles Mesa *(Advisor: Ken Paige)*
Niraj Rayamajhi *(Advisor: Julian Catchen)*

Edwin M. Banks Memorial Award

Alec Luro *(Advisor: Mark Hauber)*

Odum-Kendeigh Research Grants

Samantha Capel *(Advisor: Ken Paige)*
Christopher Holmes *(Advisor: Carla Cáceres)*
Cody Jones *(Advisor: Ken Paige)*
Lynette Strickland *(Advisor: Carla Cáceres)*

Herbert Holdsworth Ross Memorial Awards

Nathalie Baena Bejarano *(Advisor: Sam Heads)*
Charles Dean *(Advisor: Sydney Cameron)*
Joshua Gibson *(Advisor: Andy Suarez)*
Christian Millan-Hernandez *(Advisor: Chris Dietrich)*
Rachel Skinner *(Advisor: Chris Dietrich)*
Daniel Swanson *(Advisor: Kevin Johnson)*

Philip W. Smith Memorial Award

Tanya Josek *(Advisor: Marianne Alleyne)*

William H. Luckmann Award

Daniel S. Bush *(Advisor: May Berenbaum)*

Fred H. Schmidt Summer Scholars

Kristen Reiter *(Advisor: Marianne Alleyne)*
Jonathan Tetlie *(Advisor: Alex Harmon-Threatt)*

Entomology Summer Stipend Awards

Carl Scott Clem *(Advisor: Alex Harmon-Threatt)*
Brenna Decker *(Advisor: Alex Harmon-Threatt)*
Elijah Juma *(Advisor: Juma Muturi)*
William Montag *(Advisor: May Berenbaum)*
Allison Parker *(Advisors: Brian Allan & Juma Muturi)*
Kyle Parks *(Advisor: Jim Whitfield)*
Eric South *(Advisor: Ed DeWalt)*
Erin Updyke *(Advisor: Brian Allan)*

Harold C. and Sonja L. Labinsky Award

Daniel Raudabaugh *(Advisor: Andrew Miller)*

John R. Laughnan Awards

Nick DeLucia *(Advisor: Carl Bernacchi)*
Kavya Kannan *(Advisor: Amy Marshall-Colon)*
Julie Nguyen *(Advisor: Ray Ming)*
Daniel Raudabaugh *(Advisor: Andrew Miller)*

Govindjee and Rajni Govindjee Award for Excellence in Biological Research

Ingrid Romero *(Advisor: Surangi Punyasena)*

Graduate Students in Ecology and Evolutionary Biology Symposium Awards Judged by Faculty

Best Overall

Nicholas Sutton *(Advisor: James O'Dwyer)*

Most Outstanding Talk by a Ph.D. Candidate

Rachel Moran *(Advisor: Becky Fuller)*
Kelsey Witt *(Advisor: Ripan Malhi)*

Most Outstanding Talk by a MS Candidate/ Pre-Prelim Ph.D.

Michelle St. John *(Advisor: Becky Fuller)*

Graduate College Dissertation Travel Award and Graduate College Conference Travel Award

Nicholas Anderson

North Central Branch SARE Award

Scott Clem

Sigma XI, Prairie Biotic Research Award and Graduate College Master's Travel Award

Brenna Decker

The College of Liberal Arts & Sciences Teaching Excellence Awards

LAS announced their 2017 Award Recipients and **Christopher Holmes**, Department of Animal Biology received the Excellence in Undergraduate Teaching by Graduate Teaching Assistants award. For complete award listing: go.illinois.edu/LASAwards

Edward S. Deevey Award For Student Excellence In Paleoecology

The Paleoecology Section of the Ecological Society of America has established the Edward S. Deevey Award to honor Deevey's efforts and dedication in fostering the highest quality of graduate student research in paleoecology. The award is given for the best presentation of paleoecological research by a graduate student at the ESA Annual Meeting. Occasionally, a runner-up is also chosen. Paleoecology is defined to include studies that use sedimentary, paleontological, historical, or retrospective archives and proxy records to describe and interpret ecological patterns and processes at all time scales.

Joseph Napier is the recipient of the 2017 Deevey Award for his presentation "Rethinking glacial plant dynamics: multiple refugia and local expansion of a species complex north of the ice sheet." Joseph received a B.S. in Biology from Wake Forest University and is currently a Ph.D. candidate in the Department of Plant Biology at UIUC. His research involves using a novel approach that integrates genomics, species niche modeling, and paleorecords to unravel past species dynamics in response to pronounced climate change. For his dissertation, Joseph is focusing on the post-glacial dynamics of an alder species complex in Alaska and adjacent Canada. His ESA talk was coauthored by Guillaume de Lafontaine, Matias Fernandez, Katy D. Heath, and Feng Sheng Hu (advisor).

For complete article: go.illinois.edu/NapierESA

POSTDOC AWARD

NIH Fellowship

Jennifer Hellmann Johnson, Animal Biology Department, received the Ruth Kirschstein National Research Service Award postdoctoral fellowship from NIH. The purpose of the Kirschstein-NRSA postdoctoral fellowship is to enhance the research training of promising postdoctoral candidates who have been potential to become productive, independent investigators in scientific health related research fields relevant to the missions of the participating NIH Institutes and Centers. The title of Jennifer's proposal is "Mechanisms driving multigenerational transmission of paternal stress in a new model."

The proposed research is relevant to public health because understanding the impacts of fathers on offspring development can strengthen our ability to know when health-related interventions in humans will be necessary, as well as what types of health interventions may be most effective. The proposal is relevant to NIH's mission because fathers have a substantial impact on the well-being of their offspring. Understanding the transgenerational effects of paternal experiences, as well as the mechanisms underlying their persistence, will strengthen our ability to predict the extent to which diseases or stress experienced by fathers will be inherited by their children or grandchildren.

SCHOOL HONORS

Highest Distinction	Joseph Edwards
High Distinction	Siyuan Cheng Cameron Schwing Natcha Suriyavirun Dajia Ye
Distinction	Hyun Sak Choi Alexander Duman Eric Hauser Jacqueline Piekos Lauren Shechtman Gargi Sundaram Kun Yun

"Rosie O" –Brenna Decker
1st place | Biological Imaging Category | SIB Photo Competition

"Camera trapping in the mist" Darien, Panama –Erin Welsh
2nd place | Biologists at Work Category | SIB Photo Competition

UNDERGRADUATE STUDENT AWARDS

Robert H. Davis Research Prize
Brendan Jamison

Robert H. Davis Undergraduate Distinction Award
Joseph Edwards

Camp Family Research Awards
Manuel Perez
Jaké Ritthamel

Spyros Kavouras Memorial Summer Research Award
Cameron Schwing

Joann Kavouras Memorial Scholarship
Andrea Baldwin

***i*Bio Summer Internships**
Erika Carlson
Brendan Jamison
Alex Riley

***Scaphiopus holbrookii* Award**
Katherine Julkowski

Oliver J. Bell Merit Scholarship in IB
Laura Burns

Judy Willis Scholarship
Erika Carlson

IBH Sophomore Achievement Scholarship
Laura Janousek

IBH Junior Achievement Scholarship
Gargi Sundaram

SIB Merit Fellow
Abraham Matlak

AB/AAP Summer Research Fellowships
Brianna Bowman
Geraldine Dagher
Gabriela Murillo
Emina Sipic
Juliana Vidal

UIUC Student Employee of the Year
Samantha Barratt

Harriet Long Award
Siyuan Cheng

IB Distinction Award
Natcha Suriyavirun

Robert J. Graesser Research in Plant Biology
Alex Riley

Entomology Research Award
Isabel Skidmore

Alex Riley received ASPB (American Society of Plant Biologists) Summer Research Fellowship and will be presenting his work at the 2018 conference.

Juliana Vidal was awarded funding for research in the fields or labs of the School of Integrative Biology that supports an undergraduate with big-picture questions and visions for the applications of those ideas. The backing of the Animal Biology Summer Research Fellowship allowed me to meet mentors, make connections, and see firsthand the inspiring nature of human collaboration in research.

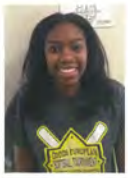
Natcha Suriyavirun earned High Distinction for her distinction project titled, "historical soil drainage effects on soil properties, microbial community composition, and greenhouse gas emissions." She also won the Integrative Biology Distinction Award.

Joseph Edwards earned Highest Distinction for his distinction project titled "evaluating the use of biochar in mitigating nitrous oxide emissions related to microbial nitrification and denitrification activity in an Illinois maize field." He also won the Robert H. Davis Undergraduate Distinction Award.

Alex Pane NSF GRFP award to take to Washington for PhD in Forest Ecology

UNDERGRAD RESEARCH COMMENTS

Andrea Baldwin | *Joann Kavouras Memorial Scholarship*
The Joann Kavouras Memorial Scholarship funded all of my summer expenses while I remained on campus and performed research in the Cáceres Laboratory. There, I studied the effects of different environmental conditions on mosquito development to see how the micro-biome affects disease transmission.



Brianna Bowman | *AB/AAP Summer Research Fellowship*
This summer, as a part of the Animal Biology Summer Research Fellowship, I was able to work in Dr. Alison Bell's Fish Lab and help conduct research to further the bounds and knowledge of science. I was able to learn a lot more about the scientific process and what it takes to get scientific research in motion through full on immersion into the lab. I had an amazing experience and am grateful for the opportunity to work alongside such intelligent and driven people.

Laura Burns | *Oliver J. Bell Merit Scholarship in IB*
The Bell Scholarship allowed me to stay on campus and do some amazing research, working with Dr. Brian Allan's lab. This lab does most of its field experiments during the summer, so I would not have been able to experience the same thing in the fall or spring. I really loved the experience and look forward to continuing to do summer research in the future.

Erika Carlson | *iBio Summer Internship*
I conducted research with Dr. Alison Bell, studying stickleback fish by setting up a remote fish lab. Through this experience, I have developed new skills in experimental design, lab maintenance, behavioral observation, and time management. I got a taste of what graduate school (and beyond) will be like.

Geraldine Dagher | *AB/AAP Summer Research Fellowship*
I worked in Dr. Brian Allan's lab on mosquitoes, and I am thankful for the opportunity. My research experience this summer has made me decide to pursue research during and after undergrad as I thoroughly enjoyed my research time. The money from this award has helped me immensely with pursuing my college education.

Laura Janousek | *IB Honors Sophomore Achievement Scholarship*
As the recipient of the Integrative Biology Honors Sophomore Achievement Award, I was able to finance staying on campus for the summer of 2017 and continue my research project in the Marshall-Colon lab. The ability to continue my research in the summer allowed me to learn several new lab techniques, as well as put me ahead for my independent research during the fall semester!

Katie Julkowski | *Scaphiopus holbrookii Award*
Working in a lab was something that I wanted to experience and with the award that I received I was able to focus on what I was learning rather than getting a paid position. Now after a whole summer of lab experience, I am continuing into the fall working on a genetic hormone project.

Gabriela Murillo | *AB/AAP Summer Research Fellowship*
This summer I had the opportunity to conduct my own research project in the Harmon-Threatt lab with funds provided by the LAS Access and Achievement Program. This award really helped me develop a better understanding of how to develop my own research project and contribute to the scientific community.

Jake Ritthamel | *Camp Family Research Award*
In Dr. Alison Bell's lab I worked on projects relating to personality and parenting in three-spined stickleback fish and began constructing an automated learning device as an independent research project. I'm extremely thankful for the award that allowed me to focus on my research by providing the means for me to stay on campus and pursue my projects.

STUDENT NEWS

UNDERGRADUATE NEWS

Two undergrads improve plant carbon-cycle models

"It's impossible to measure every plant everywhere through time across the globe," said **Kevin Wolz**, who conducted the new research with Mark Abordo when both were undergrads. "So, we instead measure a few things experimentally and then represent that with some math, which is a model." For complete article: go.illinois.edu/PlCarbCycle

Alex Pane's paper was published in Applications in Plant Science

"An assessment of the efficacy and peak catch rates of emergence tents for measuring bee nesting." *Applications in Plant Sciences* 5: 1700007. Available at: bioone.org/doi/10.3732/apps.1700007.

Cameron Schwing | *Spyros Kavouras Memorial Summer Research Award*
I had the amazing experience of participating in full-time summer research in the Cáceres Lab. I was constantly forced to think critically in order to adjust experimental designs, to troubleshoot flaws and shortcomings-greatly improving my scientific skills. I highly encourage every student who is passionate about science to consider pursuing a summer research opportunity.

Emina Sipic | *AB/AAP Summer Research Fellowship*
The AAP Animal Biology Research Fellowship was my first step in research. I'm incredibly grateful for the opportunity to work in Dr. Yang's lab. I've come to realize that Biology in practice is way more inviting than it may seem in textbooks.

"North Alabama Cave Crickets" –Scott Clem
2nd place | Nature Category | SIB Photo Competition

STUDENT NEWS

GRADUATE NEWS

Illinois team tackles mysterious disease afflicting wild and captive snakes

Biologists and veterinarians across the central and eastern United States are calling on researchers at the University of Illinois to help them identify, understand and potentially treat snake fungal disease, a baffling affliction affecting more than a dozen species of wild and captive snakes in at least 15 states. Researchers include **Daniel Raudabaugh** (above, left) from our Plant Biology Department. For complete article: go.illinois.edu/RaudabaughSnakes

Anemonefish dads further fathering research

Like the father in "Finding Nemo," anemonefish dads will do almost anything to support their offspring. Their parenting instincts are so strong that if you give a bachelor anemonefish a scoop of anemonefish eggs from an unrelated nest, he will care for them—constantly nipping at them to remove debris and fanning them with oxygen-rich waters—as if they were his own. (Any other fish would eat them, researchers say.) "Because the fish are so committed to their role as fathers, we're able in the lab to dissociate their parental behavior—the fanning and the nipping—from behaviors associated with courtship, territory defense and nest defense," said PEEC graduate student **Ross DeAngelis**, who led the study with psychology Professor Justin Rhodes.

Brief interactions spur lasting waves of gene activity in the brain

A five-minute encounter with an outsider spurs a cascade of changes in gene activity in the brain that can last for hours, researchers report in a study of stickleback fish. Animal Biology Professor, **Alison Bell**, graduate student **Syed Abbas Bukhari** and their colleagues tracked changes in gene expression in the stickleback brain after the fish encountered an intruder. For complete article: go.illinois.edu/Stickleback0717

Insect Astronauts: Eclipse Watchers Learn About Entomology in Orbit

Three graduate students—**Brenna Decker, Katie Dana and Tanya Josek**—hosted a booth to highlight the important, if not widely known, connections between astronomy and entomology. Right in the middle of the table was a collection of dung beetles belonging to both Scarabaeidae (scarab beetles) and Geotropidae (earth-boring dung beetles). Dung beetles are a group of insects that are well known for rolling big balls of dung, but they are less known for their ability to utilize the Milky Way and the moon to navigate with great precision here on earth. For complete article: go.illinois.edu/EntEclipse

Some plants grow bigger–and meaner–when clipped, study finds

Some plants behave like the mythical monster Hydra: Cut off their heads and they grow back, bigger and better than before. A new study finds that these "overcompensators," as they are called, also augment their defensive chemistry—think plant venom—when they are clipped. The study, reported in the journal Ecology, is the first to find this link and to trace it to three interconnected molecular pathways. Graduate student **Miles Mesa**, led the research with Animal Biology Professor **Ken Paige**. For complete article: go.illinois.edu/ClippedPl

"Cruising Around"
–M. Grobelny

School of Integrative Biology Seniors Reflect on Their Major

Graduating seniors answered a survey about their experiences in Integrative Biology. Here, in their own words, they recall the most positive aspects of being an IB major at the University of Illinois.

"The professors were accessible and understanding. They really seemed to care for us and try their best to teach us the subject matter."

"There was a strong emphasis on being well-rounded and understanding rather than being able to spew memorized facts."

"Interactive classes, labs were immersive. Professors well versed in content and able to tell real stories from their experience in the field."

"Being an IB major was a very enriching experience, I learned so much and the professors were great. They were always extremely passionate about what they were teaching and you could tell they cared about our learning."

"The faculty and students were all very friendly, the class material was very interesting and enriching, and I always felt very connected to my major."

ILLINOIS
School of Integrative Biology
COLLEGE OF LIBERAL ARTS & SCIENCES

286 Morrill Hall, MC-120 | 505 S. Goodwin Avenue | Urbana, IL 61801

NONPROFIT ORG
US POSTAGE PAID
BLOOMINGTON, IL
PERMIT NO. 437

WE VALUE YOUR SUPPORT!

"BASE Jumping" –K. Denise Kendall
3rd place | Nature Category | SIB Photo Competition

Your gifts help us elevate the impact we have on our students and research. Thank you for your consideration and support!

Ways to make a tax-deductible gift:

Online

Visit the university's online giving page at:

sib.illinois.edu/alumni/donations

Mail

Indicate fund name on check memo line and mail to:

University of Illinois Foundation
PO Box 3429
Champaign, IL 61826-3429

"Tick Embryo–Ready to Hatch" –Tanya Josek
2nd place | Biological Imaging Category | SIB Photo Competition

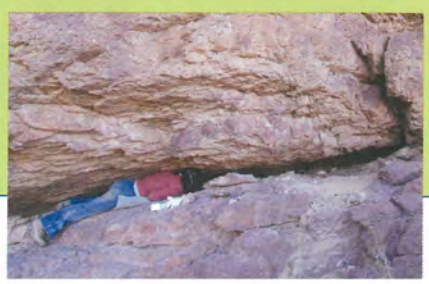
Featured Funds

School of Integrative Biology
Integrative Biology Honors Program Fund (#338025)
Natural History Building Renovation Fund (#337834)
SIB General Scholarship Fund (#343638)

Department of Animal Biology
LAS Annual Fund for Animal Biology (#334871)

Department of Entomology
LAS Annual Fund for Entomology (#334870)

Department of Plant Biology
LAS Annual Fund for Plant Biology (#334872)

Development contact:
Trent Reed
reed15@illinois.edu
(217) 300-5518
Toll free: (877) 265-4910

"Searching for fossil pollen in packrat middens," Atacama Desert, Chile –Ingrid Carolina Romero
3rd place | Biologists at Work Category | SIB Photo Competition