

# BIOFEEDBACK

THE NEWSLETTER OF THE BIOLOGY DEPARTMENT AT RHODES

VOLUME 30

OCTOBER 2015

NUMBER 1

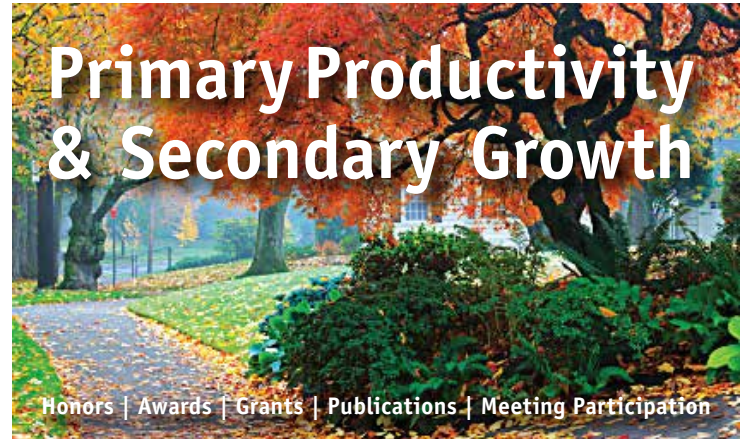
## The Chair's Niche



We know that many of you want certain Biology courses, particularly in cellular/molecular areas. This comes in part because of your interests, and in part because some of these courses are desired or needed by students pursuing health professions. Over the past few years we have worked hard to provide more of these

classes by creating new courses (e.g., Genetics without lab), by offering some courses with large lectures and two lab sections (e.g., Microbiology), and by offering some courses both semesters (e.g., Molecular Biology). This spring, Cell Biology becomes the latest Biology course to appear twice in one year. In spite of this uptick in cellular/molecular classes, we maintain a commitment to offering a diversity of course options. This spring we are fortunate to be able to offer two upper-level organismal courses, Conservation Biology and Ornithology, that provide field experiences in their lab sections. For those of you who have spent the last few years doing wonderful experiments inside a laboratory, here is your chance to get outside for a change! As Biology majors, you are not required to take particular courses after you finish Core Biology; but, with great freedom comes great responsibility. Take subjects in which you have a genuine passion, but also seek to sample a diversity of courses from the molecular to the ecological. For those planning careers in behavior, experience in subjects such as genetics can give new insights to your understanding of the natural world. Familiarity with the principles of evolution can shape one's understanding of cell biology. Remember that if you leave Rhodes and start medical school, there will be no courses that allow you to go outside and experience nature. We have a terrific Biology program with a wonderful diversity of courses, and we hope you will take advantage of it!

– Carolyn Jaslow, PhD



## HONORS AND AWARDS

### Congratulations to:

**Carlos (Teddy) Huerta '15** and **Margit Mikkelsen '15** received the Award for Excellence in Biology.

**Alison Hanson '15** was presented the Award for Outstanding Research in Biology.

**Jennifer Loomer '18** and **Zain Virk '18** received the Award for Excellence in First-Year Biology.

**Tina Dao BMB '15** was presented the Award for Outstanding Research in Biochemistry and Molecular Biology.

**Alison Hanson '15** and **Taylor Sieben ENVS '15** received the Rhodes Early Career Award in Environmental Science and Studies.

**Brooke Rose ENVS '16** and **Catherine Miller ENVS '16** received the Rosanna Cappellato Award in Environmental Science.

**Aubrey Schonhoff NEUR '15** was presented the Hunter Award for Excellence in Neuroscience.

**Taylor Sieben ENVS '15** was inducted into the Hall of Fame.

Several students received presentation awards at the Western Regional Meeting of Tennessee Academy of Science, April 11, 2015. Oral presentation awards were received by **Emily Hayward BMB '16** (1st place in Health & Medical Sciences), **Alisha Patel '17**, **Aubrey Howard '15**, **Patrick Leavey '17** and **Katherine Goebel '17** (2nd place Organismal Biology) and **Madeline Carwile '16** (3rd place Organismal Biology).

### New Omicron Delta Kappa honor society members:

**Robin Barrow BMB '17**, **Carol Elsagr '16**, **Douglas Fetterman '16**, **Daniel Sumner Magruder NEUR '16**, **Chloe Meriwether '16**, **Catherine Miller ENVS '16**, **Lauren Smith '16**.



## New Mortar Board Honor Society members:

Aashray Singareddy BMB '16, Alexis Smith NEUR '16, Allison Limmer BMB '16, Catherine Miller ENVS '16, Chloe Hundman NEUR '16, Chloe Meriwether '16, Doug Fetterman '16, Emily Hayward BMB '16, Kathryn Roys '16, Madhuri Prasad BMB '16, Quentin Buck '16, Sumner Magruder NEUR '16, Will Porter '16, Samantha Ouyang '16.

## New Phi Beta Kappa society members:

Tina Dao BMB '15, Blake Harrell BMB '15, Teddy Huerta '15, Sarah Johnson '15, Adam Petraglia '15, Anna Stachura BMB '15, Phuong Le BMB '15, Katherine Robinson BMB '15, Braden Taylor BMB '15.

## Grants and Fellowships

**Michael Collins:** Haemosporidian parasites in a declining insectivorous bird, the Chimney Swift (*Chaetura pelagica*). Tennessee Ornithological Society, \$700

**Sarah Boyle** and **Rachel Jabaily** received a Mellon Innovation Grant to work on an app for the Memphis Zoo.

## Publications

Bailey A, **Jaslow C**, Kutteh W. 2015. Minimally invasive surgical options for congenital and acquired uterine factors associated with recurrent pregnancy loss. *Women's Health* 11:161-7.

Barnett A, Santos P, **Boyle S**, Bezerra B. 2015. An improved technique using dental prostheses for field quantification of the force required by primates for the dental penetration of fruit. *Folia Primatologica* 86:398-410.

**Boyle S**. 2014. Pitheciids in fragmented habitats: land cover change and its implications for conservation. Online ahead of print. *American Journal of Primatology* DOI:10.1002/ajp.22325.

**Boyle S**, et al. 2015. Geographic comparison of plant genera used in frugivory among the pitheciids *Cacajao*, *Callicebus*, *Chiropotes*, and *Pithecia*. Online ahead of print. *American Journal of Primatology* DOI:10.1002/ajp.22422. (**DuBose M ENVS '14** was one of 38 coauthors on this article.)

de la Sancha N, Pérez Estigarribia P, McCulloch E, **Boyle S**. 2015. Micromamíferos. In: Guía de los Mamíferos de la Reserva Natural Tapytá. Velázquez, MCM Ramírez Pinto F, eds. pp. 91-124.

Ellis V, **Collins M**, Medeiros M, Sari E, Coffey E, Dickerson R, Lugarini C, Stratford J, Henry D, Merrill L, **Matthews A ENVS'14**, **Hanson A '15**, **Roberts J '14**, Joyce M, Kunkel M, and Ricklefs R. 2015. Local host specialization, host-switching, and dispersal shape the regional distributions of avian haemosporidian parasites. *Proceedings of the National Academy of Science* doi:10.1073/pnas.1515309112.

Kutteh W, Donnellan N, **Jaslow C**, Stephenson, M. 2015. Chapter 59. Recurrent early pregnancy loss. In: Bieber E, Sanfilippo J, Horowitz I, Shafi M, editors. *Clinical Gynecology 2nd Ed*. Cambridge, UK: Cambridge University Press. 918-28.

Mulder C, Wardle D, **Durrett M**, and Bellingham P. 2015. Leaf damage by herbivores and pathogens on New Zealand islands that differ in seabird densities. *New Zealand Journal of Ecology* 39:221-230.

Jackson-Hayes L, **Hill T**, Loprete D, **DelBove C CHEM '11**, **Shapiro J CHEM '13**, Henley J, and Dawodu O. 2015. Two amino acid sequences direct *Aspergillus nidulans* protein kinase C (*PkcA*) localization to hyphal apices and septation sites. *Mycologia* 107: 452-459.

Shaffer C, Barnett A, Gregory T, De Melo F, Moreira L, Alvim T, Moura V, Filó A, Cardoso T, Port-Carvalho M, dos Santos R, **Boyle S**. 2015. Mixed-species associations in cuxiús (genus *Chiropotes*). Online ahead of print. *American Journal of Primatology* DOI:10.1002/ajp.22433.

## Meetings

**Hill T**, Jackson-Hayes L, **Haugen B BMB '17**, and **Hohlt A MUS '16**. Poster Presentation: A temperature-sensitive mutation in the actA gene affects cell morphology in *Aspergillus nidulans*. Annual Meeting of the Mycological Society of America, Edmonton, Alberta. (July 2015)

**Hill T**, Jackson-Hayes L, and **Wendt K BMB '14**. Poster Presentation: The sepG gene in *Aspergillus nidulans* encodes an IQGAP homolog. 28th Fungal Genetics Conference. Pacific Grove, CA. (March 2015)

**Trychta M '16**, **Jackson E CHEM '16**, **Selman J BMB '16**, and **Collins M**. Poster Presentation: Disease ecology: Avian haemosporidian prevalence and its relationship to host life history. American Ornithologists' Union. Norman, Oklahoma. (July 2015)

**Trychta M '16**, **Jackson E '16**, and **Collins M**. Oral Presentation: Ecological correlates of avian malaria in west Tennessee. Tennessee Ornithological Society. Manchester, Tennessee. (October 2014)

**Kabelik D**. Invited Talk: Sex and aggression: Signaling within the social behavior neural network. 22nd Annual Animal Behavior Conference. Bloomington, IN. (March 2015)

## WESTERN COLLEGIATE DIVISION MEETING OF THE TENNESSEE ACADEMY OF SCIENCES

Memphis, Tennessee  
Saturday, April 11, 2015

### Oral Presentations

**Hayward E BMB '16**, Herline K, Finckbeiner S, Guibao and Zheng J: Expression and purification of active Bovine Morphogenetic Protein 4 (BMP4) for potential use as a novel anticancer therapeutic agent.

**Patel A '17**, **Howard A '15**, Lipman M, **Leavey P '17**, **Gobel K '17**, Perez P, Sancha N, **Boyle S** and **Luque L**: Morphological characterization of hemoparasites from small mammals living in forest fragments in Paraguay.

**Carwile M '16** and Roberts B: Sexual behaviors of a female Sumatran tiger at the Memphis Zoo following Deslorelin implant.





# Curricular Evolution Biology Course Updates Spring 2016

## New Courses, More Sections, and Course Inversions

To help meet increased student demand, in the last few years we have offered Genetics, Molecular Biology, and Microbiology in both in the fall and the spring semesters. New spring additions this year will be Cell Biology and BMB 310, the BMB methods class. In addition, Microbiology will be a double section with two labs, including one in the evening (4:30-7:30 PM). Complementing this selection of some of our cellular/molecular courses will be organismal options such as Conservation Biology, taught by Dr. Tara Massad, our new chemical ecologist/environmental scientist. Please see sections below for a brief introduction to Dr. Massad and information about her Conservation Biology course. This spring also features the return of Ornithology (see below). These two upper-level Biology classes will provide valuable opportunities for students to experience outdoor field work.

### Coastal and Marine Biology Courses

Would you like to take a field course on manatees? How about studying marine ecology? The Gulf Coast Research Laboratory (GCRL) in Ocean Springs, MS is offering mini-courses in January and May, plus month-long summer courses, on these topics and more. Because Rhodes is an affiliate, courses offered at GCRL can count for Biology and Environmental Science majors. If you are interested, please talk to Dr. Collins.

### Conservation Biology

Join us this spring for both a practical and theoretical examination of conservation biology. We'll learn what it means to protect



biodiversity from the species to the landscape level through discussion of primary literature, analyses of real world conservation efforts, and practical exercises that develop our skills as scientists and practitioners. If you're interested in nature conservation and want to understand how it can best be achieved, this could be a valuable class for you. Conservation Biology (BIOL 320) will meet on TuTh 9:30-10:45 with lab on W 1:00-4:00.

### Ornithology

It's a bird, it's a plane, it's a ... Black Vulture! Learn to identify Black Vultures and other local birds! This spring, Dr. Collins will offer a five-credit course in ornithology, the study of birds. This field-based course will examine how the study of birds has informed our understanding of the natural world. Topics include the ecology, conservation, behavior, biogeography, and evolution of birds. We will even address the ancient question, "Which

came first, the chicken or the egg?" (Several scientific disciplines have converged on an answer, but simply telling you now would spoil the thrill of intellectual inquiry!). Anticipated field trips to the Ghost River, Meeman-Shelby Forest State Park, Reelfoot Lake, Eagle Lake, and Wapanocca National Wildlife Refuge will provide opportunities to learn to identify local birds in their natural habitats. By April, students will fully appreciate (and maybe even celebrate) spring migration, when neotropical migrants return to North America. Ornithology (BIOL 345) will meet on TuTh 11:00-12:15 with lab on Mon 1:00-4:00.

### Rocky Mountain Ecology Field Research Maymester

Are you interested in studying and gaining ecological field experience in Grand Teton and Yellowstone National Parks? If so, check out the Rocky Mountain Ecology Field Research Maymester (ENVS 170; F7 and F11). This year



# FRAZIER JELKE SCIENCE CENTER

## Optimal Foraging

### THE FOLLOWING COURSES WILL BE OFFERED NEXT SEMESTER

140-1	Biology II (4 Sections)	MWF 8:00-8:50, 10:00-10:50, TuTh 9:30-10:45, 11:00-12:15
141-1L	Biology II Lab (7 Sections)	Tu 12:30-3:30, 4:00-7:00, W 1:00-4:00, Th 12:30-3:30
204	Mech. of Development (Fitz Gerald)	MWF 8:00-8:50, W lab 1:00-4:00
301	Microbiology (Denson)	MWF 10:00-10:50, Tu lab 12:30-3:30 or 4:30-7:30
304	Genetics (Miller)	TuTh 9:30-10:45, Tu lab 12:30-3:30
307	Cell Biology (Hill)	TuTh 11:00-12:15
320	Conservation Biology (Massad)	TuTh 9:30-10:45, W lab 1:00-4:00
325	Molecular Biology (Wheeler)	MWF 9:00-9:50, Th lab 12:30-3:30
340	Animal Physiology (Kabelik)	MWF 8:00-8:50, M lab 1:00-5:00
345	Ornithology (Collins)	TuTh 11:00-12:15, M lab 1:00-4:00
376	Molec & Cell Neuroscience (Dougherty)	MWF 9:00-9:50
380	Topics in Biomedical Science (Lindquister)	TuTh 8:00-9:15
CHEM 414†	Biochemistry (Stoddard)	MWF 8:00-8:50 or MWF 10:00-10:50
CHEM 416†	Mech. of Drug Action (Jackson-Hayes)	TuTh 11:00-12:15
NEUR 270†	Neuroscience (Dougherty)	MWF 11:11:50

#### Senior Seminar Sections

486-01	Biogeography (Jabaily)	MWF 9:00-9:50
486-02	Molecular Basis of Cancer (Miller)	MWF 11:00-11:50

#### Courses for non-majors (fulfill the F7 requirement)

105	The Biology of Infectious Diseases (Sturm)	MWF 8:00-8:50, W lab 1:00-4:00 or Th lab 12:30-3:30
-----	--	---

† No more than two courses taken outside the Biology Department may count for the six upper-level courses required for the Biology Major.

the course will be held from May 29 – June 23. The course is appropriate for science and non-science majors. Applications (and financial aid) are considered on a rolling basis, so apply early! Please contact Dr. Boyle for more information.

#### Environmental Summer Internships

Students with interests in environmental education and environmental research should contact Dr. Boyle about summer internship opportunities at the Teton Science Schools in Wyoming.

#### Senior Seminar News

The spring Biology senior seminars are: BIOL 486-1: Biogeography, MWF 9:00, taught by Dr. Jabaily; and BIOL 486-2: The Molecular Basis of Cancer, MWF 11:00, taught by Dr. Miller. Students who signed up for one of these seminars during the lottery last spring should list it on their tree under "Other Courses" when they preregister this fall.

**Juniors note that senior seminars for the '16-'17 academic year will be listed in the spring issue of *BIOFEEDBACK*, along with information about the lottery for enrollment.**





# DEPARTMENTAL MIGRATIONS

Interviews by Sarah Morris '18



**Mr. Jackie Denson** joins the department of Biology as an Instructor. Mr. Denson is currently completing his Ph. D. in Biology at the University of Arkansas in Fayetteville. His dissertation is entitled: "A Survey of the Microbial Diversity of an Alkaline Hypersaline Evaporative Basin; Lake Magadi, Kenya". Mr. Denson comes to Rhodes from Walter State where he was an Instructor of Biology. Having lived in Memphis before, he's excited to visit the zoo again and enjoy the barbeque. He's also looking forward introducing his two aptly-named rescue dogs Nova (12.5) and Einstein (2) to Memphis life.

Professor Denson is no stranger to travel. Before Memphis he lived in a number of places, taking a liking to Montana in particular. A self proclaimed "rockhead" He was drawn to its mountainous landscape and other geological formations. While enjoying the landscape of Montana, he supported himself by working in a grocery store. It was there he would obtain his claim to fame: selling Rotisserie chicken to the paleontological celebrity, Jack Horner. We hope Memphis is just as exciting for him!



**Dr. Tara Massad** has long been fascinated by tropical forest diversity, particularly the plants and insects that comprise the multicellular majority of that diversity. Plants are fed upon by insect herbivores, and, in response, the plants defend themselves with a stunning array of secondary chemicals. However, what may be bad for an individual plant may be considered good for a forest at large, and herbivory can contribute to tropical forest diversity. The chemically mediated interactions between plants and insects and the resulting increases in species diversity are central to Dr. Massad's research. Insects don't perceive plants as taxonomic units, however; they detect their potential hosts through chemical cues. Dr. Massad is therefore studying secondary chemistry metabolomics to determine relationships between chemical diversity and taxonomic diversity. In addition, Dr. Massad is deeply concerned with conservation and restoration. She has monitored the recovery of large mammal populations in Mozambique and conducted reforestation studies in the Neotropics. At Rhodes, she teaches Environmental Science and Conservation Biology and is excited to introduce students to tropical fieldwork. Not surprisingly, she enjoys the outdoors off the clock as well. She enjoys running, along the riverfront of Mud Island especially, as well as hiking. New to Memphis, Dr. Massad is scoping out the rich music scene and live shows that the city has to offer. On campus, Dr. Massad enjoys Rhodes' commitment to community service and engagement with the larger Memphis community.



**Dr. Bayly Wheeler** is thrilled to join the Rhodes College Biology Department and the Biochemistry and Molecular Biology program as an assistant professor. Originally from Chicago, Dr. Wheeler received her bachelor's degree in biomedical engineering from the University of Michigan in Ann Arbor. It was there that Dr. Wheeler realized her two true (scientific) loves, molecular biology and genetics. Although she professes she was terrible at undergraduate research (managing to screw up a step-by-step kit), she decided she would dedicate her life to it. Set on a research career in human genetics, Dr. Wheeler joined the Duke University Program in Genetics and Genomics where she got hooked on yeast and their utility as a scientific model system. Dr. Wheeler used yeast to understand how genetically identical cells establish and maintain different patterns of gene expression - a complicated problem that has implications for development in higher eukaryotes. During a brief hiatus from the awesome power of yeast genetics, Dr. Wheeler conducted postdoctoral research at the University of California, Berkeley using the nematode *C. elegans*. In *C. elegans*, as in humans, each sex has a different number of X chromosomes; male worms have one X chromosome and hermaphrodite worms have two. Dr. Wheeler's research explored how organisms cope with this X-chromosome imbalance between the sexes. At Rhodes, Dr. Wheeler is looking forward to establishing a research program that uses genetic and genomic techniques to explore how cells maintain patterns of gene expression despite the molecular upheaval that occurs during cell division. New to Memphis, Dr. Wheeler is looking forward to becoming a barbeque aficionado. Upon first impression, Memphis to her is a "plucky" city on the come-up and she is excited to explore it with her small fluffy dog, "Izzy". In her free time, Dr. Wheeler enjoys reading but takes care to maintain a 80-20 balance between fiction and non-fiction to avoid "accidental extra" learning.



# Signals & Displays

## Short Communications



### Tri-Beta News

**Beta Beta Beta (βββ) is a national biological honor society with an active chapter at Rhodes. βββ is dedicated to the enrichment of its members' scientific experiences and to the distribution of knowledge gleaned from those experiences. Current chapter activities include participation in the Rhodes Journal of Biological Science, coordination of student**

research presentations, organization of various fundraising events, and hosting of biological seminars. βββ provides a forum to recognize those students, with a biological science as their undergraduate major, who excel academically. May it be noted that Rhodes has an array of biological science disciplines, meaning there are βββ members who are not only passionate biology majors, but also neuroscience, environmental science, and biochemistry and molecular biology majors. Regular membership can only be attained through invitation but any student meeting the criteria who is interested in becoming an associate member for the next school year should contact the current president, Sam Robertson (robsr-16@rhodes.edu) or vice president, Will Porter (porws-16@rhodes.edu). Go to [www.rhodes.edu/biology/22139.asp](http://www.rhodes.edu/biology/22139.asp) for detailed membership criteria. Tri-Beta has some exciting service projects planned for the fall. One such ongoing project entails hosting monthly meetings with the Springdale Elementary School's Science Club. We will also be volunteering at Springdale Science Saturday events. Additionally, we are selling Rhodes College Biology t-shirts with a graphic version of our recently retired token FJ dinosaur. The shirts are \$10.00 and if you wish to order one, please email Emily Hayward at (hayen-16@rhodes.edu) with your size and Rhodes box number. Finally, we will be

inducting new members this fall semester. We are excited to welcome new individuals into the society and congratulate them on their commitment to biological excellence.

Pictures of βββ events can be seen on the βββ bulletin board outside of the Biology Department office.

### Get Your Research in Print

After hours of hard work in the lab or field, why not publish your research in the *Rhodes Journal of Biological Science*? We encourage you to submit papers from your summer research or research conducted during the school year, as well as commentaries and reviews of biological topics. If you haven't written a paper recently, think

about helping out with the journal! Please contact Katy Roys (roykm-16@rhodes.edu) if you are interested in submitting a paper or working with the journal. The deadline for paper submissions will be at the start of Spring semester, so start thinking about your submission now!

### \$\$ Biology Research Award \$\$

This spring, the Biology Department will be presenting the "Award for Outstanding Student Research in Biology". Any student who has completed research at Rhodes or elsewhere is eligible for this award. The winner will receive a cash prize, be honored at the award convocation ceremony, and have their name engraved on the Biology Research Award plaque that is displayed outside of the Biology office. To be considered, a student must submit a three to five page research paper, plus a recommendation from the research supervisor, to Dr. Dougherty, [doughertyk@rhodes.edu](mailto:doughertyk@rhodes.edu) by Friday, April 1. Announcement of the award winner will be made at spring awards convocation on Friday, April 29th.





# The Hybridization Zone

## Neuroscience Program Announcements

Apart from BIOL 376 Molecular and Cellular Neuroscience, the other Neuroscience courses on offer for the Spring 2016 include NEUR 270 Neuroscience, PSYC 345 Cognitive Neuroscience, and NEUR 485 Senior Seminar. Course scheduling in 2016-2017 may be somewhat abnormal due to a scheduled sabbatical for Dr. Kabelik. Hence, the semesters during which BIOL 375 and BIOL 376 are taught that year may likely be switched. Sophomores, please remember to declare your major on time so that we can be sure to provide sufficient course offerings for you if demand is high.

## Environmental Studies and Sciences Program Announcements

Students are encouraged to visit the second floor of the recently renovated Rhodes Tower, where there is a new environmental science lab, offices and research labs for Dr. Boyle and Dr. Collins, and a lobby where students can study and meet in small groups. Please stop by and see the new space! We are also excited to have Dr. Massad (see page 5 for her biography) join the ENVS Program. There are some great Spring 2016 course offerings that are upper-level science electives for the Environmental Science major: Dr. Denson will offer BIOL 301 (L) Microbiology, Dr. Massad will offer BIOL (L) 320 Conservation Biology, Dr. Collins will offer BIOL 345 (L) Ornithology, and Dr. Van Arsdale will offer ENVS 211 (L) Geomorphology. Also, Dr. Boyle

will offer two sections of INTD 225 GIS, a required course for ENVS majors. For details about the major or minor, please contact Dr. Keller in History or Dr. Boyle in Biology.

## Biomathematics Major Announcements

The 2nd Annual BioMath Wolf River Paddle event took place on 19th of September, and we were lucky to have perfect weather for a blissful day of canoeing through the famed Ghost River portion of the Wolf River, about an hour from Memphis. Drs. Massad, Jabaily, and Gardner joined Drs. Bodine and Dunwell from the Math department, along with 7 students and 1 alumna. Many of the students are Biomathematics majors, a new and exciting interdisciplinary major; Rhodes College is one of the few liberal arts colleges in the U.S. offering such a major. For more information about the major, please contact Dr. Erin Bodine ([bodinee@rhodes.edu](mailto:bodinee@rhodes.edu)). Spring '16 courses offered that could build towards the major include Calculus I (Math 121), Calculus II (Math 122), Differential Equations (Math 251), Biology II (Bio 140 + lab), and any upper level Biology course. The math modeling courses for the major (Math 214 and Math 315) will be offered again next fall.



## Biochemistry and Molecular Biology Program Announcements

The Biochemistry and Molecular Biology Program has grown with our largest graduating class to date – warmest wishes to our graduating seniors! BMB majors are engaging in incredible research programs both on and off campus with many of our majors heading to research conferences in the upcoming months. Congratulations to those students and keep up the fantastic work!

To meet the demands of our growing program, Biochemistry, Molecular Biology, Cell Biology and Methods in Biochemistry will all be offered in Spring 2016. All BMB majors should take advantage of this generous offering of courses for the program, particularly juniors who will be able to take the Methods course this Spring. Be sure to talk to your advisor about how to take advantage of these opportunities.

As always, Dr. Miller is happy to answer any BMB related questions that you might have. Best wishes from the BMB program committee, we hope for the perfect annealing conditions for everyone's hybridizations!

*Rhodes faculty, students, and alumni on the 2nd Annual BioMath Wolf River Paddle*

# Student Presentations | April 2015

## Rhodes Undergraduate Research and Creative Activity Symposium

(Rhodes faculty supervisors listed)

**Banks A and Tutor A BMB '15.** Environmental assay of McKellar Lake (Dr. John Russ)  
Additional Faculty Sponsor: Dr. Terry Hill

**Bittner E '16,** Aviles-Robles M, Gómez F, Stallings-Smith S, Caniza M, and Ojha R. Multidrug resistant bacteremia among pediatric cancer patients in Mexico City (Dr. Mauricio Cafiero)

**Blatt E BMB '16.** Activation of DNA damage response checkpoint causes pre-anaphase cell cycle arrest in KP1019 dependent manner in *Saccharomyces cerevisiae* (Dr. Mary Miller)

**Bradley C ENVS '15, Chi Y NEUR '16, Giarla A ENVS '16 and Tremarelli M ENVS '16.** Outside spatial movement and social behavioral observations of African elephants (*Loxodonta africana*) in captivity (Dr. Sarah Boyle)

**Bradley C ENVS '15, Beamish T '15, Bohrer R '16, and Miller A '16.** Keep off of the grass: the effects of habitat development on avian species richness on two Shelby County golf courses (Dr. Thilina Surasinghe)

**Buck Q '16 and Petraglia A '15.** Design of amino acids for the synthesis of unnatural peptides with antibiotic activity (Dr. Roberto de la Salud Bea)

**Cannavo M BMB '15 and Olsen E.** Functional interactions between PkcA and candidate proteins barA, actA, and rho4 in *Aspergillus nidulans* (Dr. Loretta Jackson-Hayes)

**Carwile M '16.** Sexual behaviors of a female Sumatran tiger at the Memphis Zoo following Deslorelin implant (Dr. Sarah Boyle)

**Cummings T '15, Jacobs Q ENVS '16, Niedermair R '15, and Walker E '15.** Distribution and abundance of invasive species in Overton Park's old-growth forest (Dr. Thilina Surasinghe)

**Dao T BMB '15.** Role of copper homeostasis in the pathogenesis of *Streptococcus pyogenes* (Dr. Loretta Jackson-Hayes)

**Ebeid M '16, Crowell M '17, Dejos M, Burlison J, and Hoffman J.** Does overriding an interruptive clinical decision support prescribing alert mean the alert is not valuable? A comparison of override rates to an updated measure of clinician alert adherence (Dr. David Kabelik)

**Embury L BMB '16 and Singareddy A BMB '16.** Synthesis of unnatural amino acids and their introduction into the structure of peptides with potential antibiotic activity (Dr. Kimberly Brien)

**Fuller A ENVS '16.** Mapping and analyzing Costa Rica's current and potential protected areas (Dr. Michael Collins)

**Hartline J NEUR '16 and Choudhury S NEUR '15.** Neural populations and baseline neural activity associated with bold/shy behavioral continuum in relevant brain regions of the male green anole (*Anolis carolinensis*) (Dr. David Kabelik)

**Haugen B BMB '17 and Loomer J '18.** Visualization and deletion of a gene governing cell wall integrity in *Aspergillus nidulans* (Dr. Terry Hill)

**Hayward E BMB '16.** Expression, refolding, and purification of Bone Morphogenetic Protein 4 (BMP4) for potential use as an anticancer therapeutic agent (Dr. Laura Luque)

**Heda R BMB '16 and Bridgges D.** Investigating TSC-dependent autism in *Drosophila* (Dr. Jonathan Fitz Gerald)

**Huerta T '15.** Characterizing Strain-Specific H5 Influenza Virus Replication in Macrophages (Dr. Gary Lindquenter)

Jackson E, **Tryctha M '16,** and **Selman J BMB '16.** Disease ecology: Avian haemosporidian prevalence and its relationship to host life history (Dr. Michael Collins)

**Johnson C '16,** Karlsson E, Shultz-Cherry S. The weight of obesity on influenza virus evolution (Dr. Carolyn Jaslow)

**Kuhlman C '16, Harris C ENVS '16, Xiong K '15, and Phelps A '15** Assessment of riparian buffer zones in the southwest region of Tennessee (Dr. Thilina Surasinghe)

**Laves S '15 and Ammons E.** The road to healthy food: A GIS analysis of transportation and food availability in Shelby County (Dr. Peter Hossler)

**Lenny B BMB '16.** A novel gene shows characteristics of myosin activity in *Aspergillus nidulans* (Dr. Terry Hill)

**Lenny B BMB '16,** Shanmuganatham K, Webster R, and Jones J. Possible role of transmission of H9N2 influenza virus from pet birds to mammals (Dr. Gary Lindquenter)

**Lowrance E '15.** Spatial Distribution of African Elephants at the Memphis Zoo (Dr. Sarah Boyle)

**McCormick R BMB '15,** Holbrook G, Carillo A, Zhu F, and Guy RK. Microsomal modeling of two novel compounds against *Trypanosoma brucei* (Dr. Laryn Peterson)

**Mikkelson M '15,** Kovesdy C. Associations of systolic blood pressure variability with mortality (Dr. Alan Jaslow)

**Myers L BMB '15 and Atiq Z BMB '17.** Physical interactions between protein kinase C and the formin SepA at hyphal tips and septation sites highlight roles in cell wall synthesis of *Aspergillus nidulans* (Dr. Loretta Jackson-Hayes)

**Patel A BMB '16,** Klein J, Willis C, and Peng J. Knockdown in embryonic stem cells has no effect on cell pluripotency (Dr. Dhammika Muesse)

**Peravali NEUR '17 and Gatewood J.** Training improves participant-implemented equal spaced and expanded retrieval practice (Dr. Geoffrey Maddox)

**Petraglia A '15,** Butch E and Snyder S. Evaluation of 6-[18F]fluorodopamine (18F-DA) as an effective PET radiotracer for the diagnosis and treatment of neuroblastoma (Dr. Ann Viano)

**Sharfman N NEUR '15 and Barrow D BMB '17.** Investigating the interaction between the anti-epileptic drug gabapentin and an A-type voltage-gated potassium channel (Dr. Kelly Dougherty)

**Sidarous M BMB '17 and Moir A.** Deaf family literacy #1: Bridging the gap between research and the deaf community in Memphis (Dr. Lori Garner)

**Sidarous M BMB '17,** Moir A, and Garner L. Deaf family literacy #2: Healthcare needs for deaf individuals (Dr. Lori Garner)

**Smith A NEUR '16 and Hartline J NEUR '16.** Serotonin activity in the male brown anole (*Anolis sagrei*) after social behavior encounters (Dr. David Kabelik)

**Tews A '16 and Knott K.** Monitoring thermoregulation in captive polar bears (*Ursus maritimus*) at the Memphis Zoo (Dr. Sarah Boyle)

**Ulrich L NEUR '16** Anomorph projection display piece (Dr. Jason Haberman)

**Weidow T '16, Preg S '15, Puri R '16, Skrmetta K '15, and Willis A ENVS '16.** Effects of urbanization on the richness and diversity of amphibian species (Dr. Thilina Surasinghe)

