



# BIOFEEDBACK

THE NEWSLETTER OF THE BIOLOGY DEPARTMENT AT RHODES

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The purpose of *BIOFEEDBACK* is to provide an important and timely vehicle for the dissemination of information concerning BOTH faculty and students of the Biology Department. Any notices or information that you wish to include in *BIOFEEDBACK* should be submitted to either Dr. Carolyn or Dr. Alan Jaslow. *BIOFEEDBACK* is published each semester.

## The Chair's Niche



The Department of Biology has a well-kept secret. Unfortunately, it is not one we want to keep, so I'm here to confess. We do represent and embrace the botanical sciences. Whew! Now that it's out, I feel so much better.

You wouldn't know it from our current catalogue entries, but if you were to dig into the archives, you'd see that it was not too long ago when our introductory biology series was Botany and Zoology, and we had courses in Plant Survey and Plant Physiology. But you may be surprised to find out that plant sciences are among us even today. Rhodes houses a sizeable herbarium collection and a level IV certified arboretum. Dr. Hill has MS and PhD degrees in botany from the University of Florida. Dr. Cappellato conducted vegetation surveys for her research at Emory University and taught a Plant Population Biology course there, and she oversaw the effort for re-certification of the arboretum at Rhodes. Drs. Boyle and Collins study animals but in relation to their botanical environments. If you know Dr. Fitz Gerald at all, you know of his passion for plants and their mechanisms of development. And Dr. Rachel Jabaily, our newest colleague arriving in January, rivals Dr. Fitz Gerald in her passion as she studies plant evolution.

We are fortunate that Dr. Boyle offered the Plants and People course this fall, and we hope to have the flexibility to offer other plant-focused courses in the very near future. For now, to satisfy the inner plant scientist in you, we invite you to

pick up a booklet in the Biology office and explore Rhodes' Arboretum and ask any of the faculty named above how you might get involved in research.

*Dr. Gary Lindquester*

## Primary Productivity and Secondary Growth



The following is a list of honors, awards, publications and meeting participation of our faculty and students since March 21, 2011.

## Honors and Awards

### Congratulations to ...

...**Josh Anderson '11** who was awarded the Award for Excellence in Biology for the '10-'11 academic year. **Theodore Boozalis '12** was given the Award for Outstanding Research in Biology, and **Margaret Blake '14** was presented the Award for Excellence in First-Year Biology.

...**Dr. Mary Miller** who was appointed the J.T. and V.B. Robertson Chair of Biological Sciences.

...**Dr. Michael Collins** who was appointed to the Advisory Council for Mississippi River Corridor – Tennessee.

...**Lindsey Bierle '12**, **Chris Perkins '13**, and **Sara Beth Taylor '13** who were inducted into the Alpha Epsilon Iota Chapter of Theta Alpha Kappa.

...**Rebecca Miller '12** who won the award for outstanding presentation by an undergraduate at the Southeastern Regional Yeast Meeting, and **Phillip Lyons '12** who was awarded first place in the poster presentation competition at the Western Regional Meeting of the Tennessee Academy of Sciences (see "Meetings" below for the titles of their presentations).

...the Phi Beta Kappa initiates of the class of 2011, **Josh Anderson**, **Sarah Allen NEUR**, **Christopher Dorsett NEUR**, **Katelyn Foster**, **Allison Price**, and **Michael Pluta BMB**.

...the new ODK honor society members: **Sharwil Bell '12**, **Lindsey Bierle '12**, **Ted Boozalis '12**, **Austin DeBeaux '12**, **Mae Gillespie '12 NEUR**, **Keshav Kukreja '12 NEUR**, **Anna Magliolo '12 NEUR**, **Salar Rafieetary '12 NEUR**, **Sarah Allen '11 NEUR**, **Josh A. Anderson '11**, **Lee Bryant '11**, **Katelyn Foster '11**, **Greg Palm '11**, and **Chelsea Peters '12 ENVS**.

...biology seniors **Sharwil Bell, Lindsey Bierle, Zoe Clark, Austin DeBeaux,** and **Amanda Sandifer**, Neuroscience seniors **Cintara Bradley, Mae Gillespie, Anna Magliolo,** and **Salar Rafieetary**, and Environmental Science major **Chel-sea Peters**, who were initiated into the Mortar Board Honor Society.

...the new officers of Rhodes' chapter of  $\beta\beta\beta$ : **Lindsey Bierle '12** (President), **Ted Boozalis '12** (Vice President), **Madeline Jeansonne '12** (Secretary), and **Cintara Bradley '12 NEUR** (Treasurer). For more information about this organization, see p. 7.

## Grants and Fellowships:



In June **Dr. Sarah Boyle** received a grant from GeoTech to purchase five GPS units for student use in the GIS Lab. Students are encouraged to stop by the lab and check out the GPS units for class projects, research, etc.

## Publications:



(Be sure to send us copies of your publications when they appear. Thanks!)

**Collins MD, Simberloff D,** and **Connor EF.** 2011. Binary matrices and checkerboard distributions of birds in the Bismarck Archipelago. *Journal of Biogeography*. doi: 10.1111/j.1365-2699.2011.02506.x

**Castore R, Hughes C, Debeaux A '12, Sun J, Zeng C, Wang S, Tatchell K, Shi R, Lee K, Chen DF, Harrison L.** 2011. *Mycobacterium tuberculosis* Ku can bind to nuclear DNA damage and sensitize mammalian cells to bleomycin sulfate. *Mutagenesis*, doi: 10.1093/mutage/ger049.

**Kabelik D., Schrock SE, Ayres LC,** **Goodson JL.** 2011. Estrogenic regulation of dopaminergic neurons in the opportunistically breeding zebra finch. *General and Comparative Endocrinology* 173: 96-104.

**Kelly AM, Kingsbury MA, Hoffbuhr K, Schrock SE, Waxman B, Kabelik**

**D., Thompson RR, Goodson JL.** 2011. Extended amygdala nonapeptide neurons and septal  $V_{1a}$ -like receptors potentially modulate songbird flocking and responses to novelty. *Hormones and Behavior* 60: 12-21.

## Meetings:



In June **Dr. Sarah Boyle** attended the Association for Tropical Biology and Conservation / Society for Conservation Biology – Africa joint conference in Arusha, Tanzania. At the meeting Dr. Boyle presented, "Effects of imagery resolution of the evaluation of fragmented landscapes: a case study from Paraguay," coauthored by C. Kennedy, N. de la Sancha, P. Pérez, K. Colman, and J. Torres.

**Dr. Michael Collins** attended the American Ornithologists' Union in Jacksonville, Florida, in July, where he presented "Checkerboard distributions of birds in the Bismarck Archipelago" coauthored by D.S. Simberloff and E.F. Connor. He also presented a poster at the Association of Field Ornithologists and Wilson Ornithological Society in Kearney, Nebraska, in March titled "Differential passerine migration during spring and fall in the Gulf of Maine," coauthored by T.W. Moore, A.J. Leppold and B. Holberton.

In May **Dr. Jonathan Fitz Gerald** was a guest lecturer at the University of Chicago speaking on "The Polycomb target AtFH5, an Arabidopsis formin homologue, as a potential realizator of seed size variation through parental genomic imprinting." He also presented two research posters at the 22<sup>nd</sup> Annual International Conference of Arabidopsis Research in Madison, Wisconsin in June. The posters were entitled "An adaptive model for parental genomic imprinting" coauthored with **Maria Cartegena '11** and **Jenkin**

**Chan '11,** and "Imprinted expression of polarizing genes in the seed endosperm is subject to natural variation" coauthored with **Brittany Pope '13,** **Jenkin Chan** and **Rina Ishii '11.**

**Dr. David Kabelik** attended the 7th International Symposium on Amphibian and Reptilian Endocrinology and Neurobiology (ISAREN) and the Inaugural Meeting of North American Society for Comparative Endocrinology (NASCE) in July. Both conferences were held in Ann Arbor, Michigan. At ISAREN, he presented the poster titled "Neural activity associated with social behaviors in the brown anole, *Anolis sagrei*," coauthored by **Emily Burford '11,** **Leah Singh '11,** **Veronica Alix '12,** **Aaron Kala '12 NEUR,** **Will Hawes '12,** **Salar Rafieetary '12 NEUR,** and **Jason Ballard '11.**

In June **Dr. Laura Luque de Johnson** and **Adiha Khan '13** traveled to the 86<sup>th</sup> Annual Meeting of the American Society of Parasitologists in Anchorage, Alaska. At this meeting, Adiha presented their poster, "An integrative assessment of snake parasitism in an urban environment," which was well received by



Alex Yu '11

the parasitology international community. Coauthors included **Anna Johnson '11,** **Kimber Jones, '13,** **Matthew McCravy '12,** **Matt Grisham '12,** **Alex Yu '13,** **Dr. Jon Davis,** and **Dr. Sarah Boyle.**

**Dr. Mary Miller** attended the Gordon Conference on Chromosome Dynamics at Mt. Snow, Vermont, in July, where she presented her work on "Exposure to ruthenium-based chemotherapeutic KP1019 delays cell cycle progression in *S. cerevisiae*" coauthored by **Rebecca Miller '11.** Rebecca presented this research at the Southeastern Regional Yeast Meeting held in March, at Mississippi State University. In addition, Dr. Miller chaired a session at this meeting. Dr. Miller also attended the Council

on Undergraduate Research Business Meeting as a councilor representative to the Biology Division in June at Washington University in St. Louis, Missouri.

**Phillip Lyons '12** attended the Western Regional Meeting of the Tennessee Academy of Sciences, where he presented a poster, "Absence of sexually dimorphic second to fourth (2D:4D) toe length ratios in striped newts," coauthored by Dr. Jen Germano and Dr. Andy Kouba, both with the Memphis Zoo.

*The following student presentations were given in April at Rhodes's Undergraduate Research and Creative Activity Symposium.*

**Jason Ballard '11**, Leah Singh '11 and Veronica Alix '12 Localization of vasotocinergic and dopaminergic target sites involved in regulating social behavior in the brown anole lizard, *Anolis sagrei*.

**Ted S. Boozalis '12** and **Landon T. LaSalle '12** Good as new? Morphological and biochemical analyses reveal variation between original and regenerated lizard tails.

**Catherine Bordelon '12** Quality control of Ghost River Brewery's beer: How safe is your beer?

**Lee Bryant '11 ENVS** New Madrid and the Mississippi: Exploring the relationship between people and nature.

**Nicholas Brydon '13 BMB** Novel cancer drug exhibits cardioprotective activity during ischemia.

**Maria Cartagena '11** Analysis of rapidly discontinued medication orders in CPOE may help identify prescribing errors.

**Blake Copeland '11** and **Kelly Zhang '11** In vitro characterization of a paclitaxel eluting fibrin biomatrix for local treatment of skeletal metastases.

**Allie Elozory '13 BMB** Application of asparaginase activity assay to clinical pharmacokinetics of asparaginase in children with Acute Lymphoblastic Leukemia.

**Sandy Henin '11** HIF-1 regulation of biomarkers that may be critical in regulating breast cancer progression and metastasis.

**Rina Ishii '11** Using two-hybrid to

characterize potential Atfh5 binding domains.

**Anna Johnson '11**, **Adiha Khan '13**, **Matt Grisham '13**, **Matthew McCravy '13 BMB** and **Kimber Jones '13** Spatial analysis of parasites in snakes in Overton Park: Does having an infected neighbor affect you?

**Kimber Jones '13** Reproductive monitoring techniques in male snow leopards: testosterone levels as indicators of reproductive health.

**Adiha Khan '13**, **Matt Grisham '13**, **Anna Johnson '11**, **Matt McCravy '13 BMB**, **Alex Yu '13** and **Kimber Jones '13** Invasion of the blood cell snatchers: A study of snake hemoparasitism in an urban park.

**Anna Kolobova '11 NEUR** and **Sarah Allen '11 NEUR** Differential temporal upregulation of Bax expression in response to chronic restraint stress and exercise in the mouse hippocampus and cortex.

**Bethany Larkin '13** Pre-clinical testing of the novel anthracycline AD445 in human breast cancer cell lines.

**Landon T. LaSalle '12**, **Julia Goss '11**, and **Ted Boozalis '12** Adding insult to injury: primary and secondary costs of loss in lizards.

**Luke Laudermilk '13 BMB** Exploring the potential for microRNAs to up-regulate translation by interacting with gene promoter regions.

**Phillip Lyons '12** Absence of sexually dimorphic second to fourth (2D:4D) toe length ratios in striped newts (*Notophthalmus perstriatus*).

**Anna Magliolo '12 NEUR** N- and C-terminal truncations to MCM 4 lead to a stable subunit.

**Rebecca Miller '12** Exposure to ruthenium-based chemotherapeutic KP1019 delays cell cycle progression in *S. cerevisiae*.

**Blaire O'Neal '12** Potential brownfields in Memphis, Tennessee: The American Snuff Company in the Wolf River Harbor and 1249 Fairfax Street in the Hollywood District.

**Amber Owens '12** Medulloblastoma subtypes and spatial localization.

**Jordan Perchik '13**, **Nicholas Brydon '13 BMB**, **Stephen Leavelle '14**, and

**Allison Graham '11** Characterizing the estrous cycle of critically endangered Amur leopards.

**Christopher Perkins '13** Mutational analysis of plasmodium falciparum erythrocyte binding protein 175 (EBA-175).

**Chelsea Peters '12 ENVS** Monitoring fertility in snow leopards (*Panthera unica*) through noninvasive fecal steroids.

**Van Phan '12 BMB** Defining the role of human zinc-finger antiviral protein in influenza virus infection.

**Brittany Pope '13** Parental imprinting of the Fla12 and Rop2 genes in Arabidopsis. **Allison Price '11** Use of MP2, DFT and semi-empirical calculations of protein-ligand interaction energies and *ab initio* QSAR in the development of novel statin drugs.

**Salar Rafieetary '12 NEUR**, **Aaron Kala '12 NEUR** and **Will Hawes '12** Vasotocinergic modulation of aggression in the Brown Anole lizard (*Anolis sagrei*).

**Evan Savage '12 NEUR** Radiation treatment for medulloblastoma survivors disrupts normal reading development.

**Jared Swenson '12** Examination of spring migration and stopover sites using WSR-88D radar.

**Sara Beth Taylor '13** Competition crosses as a means of studying the parental conflict hypothesis in Arabidopsis thaliana

**Sarah Tchang '12** Memphis restaurants reduce waste in landfills with the help of Project Green Fork.

**Sarah Tchang '12** The old Firestone Tire and Rubber Plant and potential brownfields on Firestone Avenue in Memphis, TN.

**Alex Tong '11 BMB** Elucidating the role of glycogen synthase kinase 3 beta in regulating the function of PAX3-FOXO1 by phosphorylation.

**Lan Tran '13** Poor fitness among childhood brain tumor survivors.

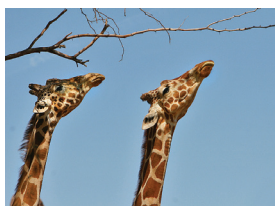
**Xiao Wang '13 BMB**, **Wenbin Du '13 BMB**, and **Brianna Hoge '12** Myosin is necessary for cell division in fungi.

**Kristin Wendt '14** and **Michael Pluta '11 BMB** The role of myosin regulatory light chain in fungal cell division.

**Emily Woods '12 BMB** High levels of microRNA-210 in rheumatoid arthritis.

# Curricular Evolution

## New Faculty and Course Updates for '11-'12



### What's Up for Spring Term?

#### Is it Sympatric or Allopatric Speciation?

"Nothing in biology makes sense except in the light of evolution" (Dobzhansky, 1973). Throughout the geological record of the Biology Department, an Evolution course has been a constant part of the curricular assemblage. Unfortunately, staffing issues created a brief gap in the fossil record, but we are extremely pleased to announce the appearance of a new Evolution course for spring.

**BIOL 200 - Evolution**, like its most recent ancestor, will include a lecture section, but unlike its ancestor, this new 5-credit course will also include a



lab. Taught by our newest member of the Department, Dr. Rachel Jabaily, students will learn how evolution, the unifying principle of biology, explains the great diversity of life -from genes to species to ecosystems. Beyond the science, class discussions will cover the history of evolution from before Darwin, to the Modern Synthesis, to the current advances in evolution important in medicine and conservation. Students will get to design and conduct original research, as well as learn to communicate about evolution with both scientific and public audiences.

#### New Courses for Your Brain:

There have recently been changes in the Neuroscience Major, some of which may also impact Biology majors. The upper-level lecture and lab course **BIO 370 Neuroscience** is no longer being offered. It has been replaced by a new lecture-only course, **BIO 375 Neuroendocrinology** (see description below). In addition, the Neuroscience program is offering two other courses that can count toward the Biology major. Biology majors can take **NEUR 270 Neuroscience** as an upper-level lecture-only course. If they take both the four-credit **NEUR 350 Neuroscience Research Methods** and NEUR 270, this combination will be credited as an upper-level lecture and laboratory course for the

Biology major. Details of these courses are listed below. Note that there is a limit on the number of non-BIO courses that can count toward the Biology major, so be sure to check your course catalogue for details.

#### **BIOL 375. Neuroendocrinology.**

Spring. Credits: 4

This course will explore reciprocal interactions between the nervous and endocrine systems: how the brain regulates endocrine homeostasis, and how developmental and daily/seasonal changes in hormone levels bring about changes in neural structure and function. These themes will be covered in an integrative manner that includes analysis at molecular, cellular, systems, and organismal levels. Topics will include gonadal hormones and neural sex differences during development and adulthood, the hippocampal-hypothalamic-pituitary-adrenal stress axis, circadian and circannual rhythms, neuroendocrine regulation of appetite and thirst, and neuroendocrine regulation of social behaviors. Prerequisites: Biology 130 and 140

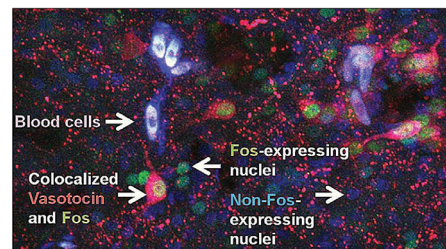
#### **NEUR 270. Neuroscience.** Fall, Spring. Credits: 4

This course examines the structure and function of the nervous system. Topics range from communication within individual neurons to higher-order brain functions such as learning, memory, perception, states of consciousness, language and the regulation of motivation and emotion. Psychiatric and neurological disorders will also be discussed. Particular attention will be given to methods and research design in the Neurosciences. Prerequisites: Biology

130 and 140, or Psychology 150

#### **NEUR 350. Neuroscience Research Methods.** Spring. Credits: 4

This laboratory methods course is designed to expose students to a wide range of neuroscience techniques including electrophysiology, stereotaxic surgery, behavioral pharmacology, tissue fixation and sectioning, histology, immunohistochemistry, western blotting, blood and salivary hormone analysis, and various psychophysiological measures. The class will be comprised of short lectures accompanying longer laboratory exercises. Prerequisites: Neuroscience 270



David Kabelik '11

#### **Spring Biochemistry Continues**

Dr. Loprete will again offer a spring section of **Biochemistry (CHEM 414)** next semester. The class will meet on MWF from 12-12:50. Note that the **Methods lab (BCMB 310)**, which works as a lab for Biochemistry, will NOT be offered in the spring.

#### **Senior Seminar News**

The spring Biology Senior Seminar offering is **BIOL 486-1, "Avian Ecology"**, taught on Tu/Th 4-5:15 by Dr. Michael Collins. Dr. Mary Miller's **BCMB 486, "Cancer Biology"** will be taught on MWF from 9-9:50. 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 take note that the senior seminar offerings for the '10-'11 academic year will be listed in the spring issue of BIOFEEDBACK, along with the date and time of the lottery through which you will select your seminar.**

### Environmental Science Options

This spring, students pursuing a major/minor in Environmental Science may choose among the course options listed below. For more information about Environmental Science, please contact Dr. Rosanna Cappellato, Associate Director of the Environmental Studies and Sciences program.



A full listing of courses required for the Environmental Science major may be found at <http://www.rhodes.edu/ess/21402.asp> and for

the minor at <http://www.rhodes.edu/ess/21395.asp>.

**ENVS 150 – Environment and Society** is a required course for both the Environmental Science and Environmental Studies minors that will be co-taught by faculty from the Natural and Social Science disciplines (Dr. Rosanna Cappellato and Dr. Kimberly Kasper). ENVS 150 fulfills the F2i curriculum requirement. Topics include resource consumption, biological diversity, agriculture, development, globalization, and local issues. Using an interdisciplinary approach, students learn the science behind environmental change, as well as the economic, political and social factors that influence and shape our responses to it.

**GEOL 111 – Physical Geology** focuses on the composition and structure of the earth and processes that create modern landscapes. Emphasis is placed on the geology of National Parks as case studies and the methods used to acquire geological knowledge.

**INTD 225 – Geographic Information Systems** will be offered by Dr. Boyle as



## Optimal Foraging

The following courses will be offered next semester. \*Note: No more than two courses taken outside the Biology Department may count for the six upper-level courses required for the Biology Major.

Number	Course Title	Hours Offered
140	Biology II	MWF 8-8:50, 9-9:50 or TuTh 8-9:15, 9:30-10:45 4 Sections
141	Biology II Lab	Tues 12:30-3:30, Wed 1-4:00, Thurs 12:30-3:30 or Friday 1-4:00 7 Sections
200	Evolution (Jabaily)	TuTh 11-12:15, Thur lab 1-4:00
204	Mechanisms of Development (Fitz Gerald)	MWF 8-8:50, Thurs lab 1-4:00
212	Environmental Issues in Southern Africa (Cappellato)	TBA
301	Microbiology (Luque de Johnson)	MWF 11-11:50, Wed lab 1-4:00
304	Genetics (Miller)	TuTh 9:30-10:45, Tu lab 12:30-3:30
320	Conservation Biology (Cappellato)	TuTh 9:30-10:45, Mon lab 1-4:00
325	Molecular Biology (Lindquester)	MWF 10:00-10:50, Th lab 1-4:00
375	Neuroendocrinology (Kabelik)	MWF 9-9:50
380	Topics in Biomedical Science (Lindquester)	WF 7:30-8:45
CHEM 414*	Biochemistry (Loprete)	MWF 11-11:50
NEUR 270*	Neuroscience (Klatzkin)	MWF 10-10:50
NEUR 350*	Neuroscience Research Methods (Kabelik/Gerecke/Klatzkin)	F 1-1:50, Mon or Tues lab 1-5:00
<b>Senior Seminar Section</b>		
486	Avian Biology (Collins)	TuTh 4-5:15
BCMB 486	Cancer Biology (Miller)	MWF 9-9:50

a four-credit course that fulfills the F6 requirement. Students will learn how to use GIS to analyze spatial data that span topics such as epidemiology, public health, pollution, natural resource conservation, urban sprawl, human behavior, and social issues. Students are welcome to stop by Dr. Boyle's office or the GIS Lab in 132 E to learn more about the GIS course and to see examples of how students are currently using GIS in their research.

Other spring Biology courses that can count toward the Environmental Science major include Conservation Biology (BIOL 320) and Microbiology (BIOL 301). See below for other Environmental Science options.

### Plan Now For an Amazing Summer Experience – You Have Three Great Options!

#### Environmental Study in Africa

The spring class, **Environmental Issues in Southern Africa (BIOL 212)**, and the summer study-abroad course, **Environmental Field Study in Namibia (BIOL 214)**, are tentatively scheduled for 2012. If enough students sign up (5 students), the class and the trip will be offered this spring (May 10<sup>th</sup>-May 31<sup>st</sup>). The class visits the Namib Desert, dry thornveld savannas, and the Kalahari sands, along with meeting indigenous



David Siu '10

people, NGOs, and governmental officers involved in local environmental issues. Together, the two-credit spring course at Rhodes (Biol 212) and the two-credit summer trip to Namibia (Biol 214) fulfill an upper-level Biology course requirement, an Environmental Science requirement, and the F11 requirement. Students who are interested in going should have attended an informational session held by Dr. Cappellato on October 12th at 4:00 p.m. in the Biology Seminar room (FJ 140E). Because the response of students attending this meeting will help to determine if the course is offered, please contact Dr. Cappellato if you are interested but did not attend on the 12th.



#### Rocky Mountain High

Are you interested in spending June studying in Grand Teton and Yellowstone National Parks? If so, check out the Rocky Mountain Ecology Maymester. Students may choose one of two courses: **ENVS 160 Rocky Mountain Ecology** (two credits, F11) or **ENVS 170**

#### Rocky Mountain Ecology Field Research

(four credits, F7 and F11). Both courses are appropriate for Biology majors, as well as non-majors; however, the courses do not count toward the six upper-level classes required for the Biology major. The application deadline is February 15. If you would like to be considered for financial aid, the deadline is February 1. Admission is on a rolling basis, so get your applications in early. For more information, please contact Dr. Boyle.

#### International Health Care



Infections are a major health issue world-wide, and even hospitals are not immune. This two-credit course, An International Experience in Health Care (BIOL 160) focuses on the prevention and control of nosocomial (hospital-acquired) infections. Students will have the opportunity to travel to Nicaragua and assist in monitoring a public hospital there for basic infection prevention and control procedures. The Nicaraguan portion of the course is June 10-23, preceded by training at St. Jude Children's Research Hospital June 4-8. An information session will be held on October 25<sup>th</sup>. For more information, please contact Dr. Luque de Johnson. Prerequisites: BIO 130 131L, or CHEM 120. Spanish language skills preferred, but not required.



## Alumni Luminescence

Does graduate school and 'real life' seem like nothing but a dream? On nights you get sleep that is? Well, wake up and pay attention! According to one of our Biology Seminar Series speakers, who just happens to be a Rhodes alumna, what you are experiencing may just be the influence that finds expression in the 'real life' you'll be living someday!

Dr. Pamela Hanson, a Biology Seminar Series speaker, disclosed some factors that impacted her progression to associate professor of Biology at Birmingham-Southern College.

Dr. Hanson graduated in 1996 with a B.S. in Chemistry (Biochemistry track), but her career path has led her further into the study of biology, including her

current collaboration with Dr. Miller. Dr. Hanson's trajectory included graduate study in Biochemistry, Cell and Developmental Biology at Emory University. In Spring 2001, Dr. Hanson finished her Ph.D. thesis research at Emory using the budding yeast *Saccharomyces cerevisiae* as a model to study intracellular trafficking of phospholipids. She subsequently joined the faculty at



Birmingham-Southern College, where she has taught Genetics, Cell and Molecular Biology, Advanced Cell Biology, and Cancer Biology.

She was awarded tenure in 2007. While at BSC, Dr. Hanson's research focused on the mechanism of action of the anti-cancer ruthenium

complexes made by BSC chemist Dr. Laura Stultz. Dr. Hanson has collaborated with Rhodes biologist Dr. Mary Miller on this project which has been funded by grants such as AAAS-Merck Undergraduate Science Research Program Grant and a Faculty Renewal Grant from the Associated Colleges of the South. In addition to the training that brought Dr. Hanson full circle back to Rhodes, she was influenced by several of her professors, stating that, "Although all my professors at Rhodes were amazing,

I model much of my teaching style after Terry Hill, who gave incredibly animated, entertaining, and thought-provoking lectures. Much to my students' chagrin, I also model my testing style after Dr. Hill's. Dr. Darlene Loprete's influence is reflected when I incorporate presentation and discussion of scientific research articles into coursework. Finally, the networking skills used to make the most of scientific conferences both intellectually and socially were learned from my graduate thesis advisor

Wylie Nichols (Emory) and have helped me develop a wide range of scientific and pedagogical collaborations, including my work with Dr. Miller."

So stay awake. Keep your eyes open. And that dream of yours just may begin to take on form and substance.



## Signals and Displays (short communications)

### New FJ Inhabitants



As you rush from class to class, you may have noticed that we have a few new inhabitants in the Biology Department. And no, we don't mean

that large class of first-year students in core! Last year we acquired a marine aquarium that is inhabited by clown fish, goby fish and several other saltwater denizens. In fact, if you have an interest in fish tanks or marine biology and would like to be part of the crew taking care of ours, please contact Dr. Cappellato (FJ 136E or cappellator@rhodes.edu). Even newer is our display designed to interest the budding herpetologist. Dr. Kabelik assembled a display of anole lizards, geckos (fat tailed and golden), and a corn snake. You may have to look carefully to see them peeking out from under rocks or quietly hiding in plain sight on one of the plants. In addition to these living displays, Dr. Jen Houghton, former Geology professor, set up across the hall from FJ-C a new exhibit featuring the Vanauhem Collection. This collection of geologic materials was acquired by William Stewart, one of the early presidents of Rhodes College. Bert Geyer, a junior Art major, researched and organized this collection under the direction of Dr. Houghton. **Sarah Tchang '12** helped put the display together. These new displays came about under the auspices of Dr. Hill, who was charged with beautifying the halls of Frazier Jelke. So be sure to welcome all our new inhabitants and included all the first-year students in that group!

### Tri-Beta News

Beta Beta Beta (βββ) is the biological honor society for the Rhodes Biology Department. βββ has a two-fold purpose. First is to provide a club where individuals with a shared interest in

biology can get together in a setting free of classroom pressures and have a little social interaction and fun. The other purpose is that of an honor society. βββ is a national honor society and is dedicated to the enrichment of its members' scientific experiences and to the sharing and dissemination of information gleaned from those experiences. Current chapter activities include participation in the *Rhodes Journal of Biological Science*, student research presentations, and a proposed URCAS reception for the biological sciences. βββ provides a forum to recognize those students, with a biological science as their undergraduate major, who excel academically. βββ sponsors a variety of projects throughout the year, some of which include a booth at Rites to Play, hosting speakers from the Memphis community, volunteering at Science Saturdays on Mud Island with local elementary schools, attending and providing interactive presentations at a local elementary school's monthly science club meetings and science nights. Although membership in βββ does not mandate participation in these events, attendance is strongly encouraged among the group in order to remain in good standing. Regular membership can only be attained through invitation, but any student meeting the criteria below who is interested in becoming an associate member for the next school year should contact the βββ president. If you are interested in membership, please contact current βββ president, Lindsey Bierle (biela@rhodes.edu).

βββ Associate Membership requirements:

- 1 completed biology course (grade of B or better)
- An interest in biology
- One-time \$35 initiation fee

βββ Regular Membership requirements:

- Must be a Biology Undergraduate major
- 3 completed semesters of Biology at Rhodes
- At least a 3.0 average in Biology at Rhodes and 3.0 average overall

- General good academic standing at the college
- One-time \$45 initiation fee\*

\*Those associate members who now qualify for a regular membership will have a \$10 promotion fee.

### 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 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 Laura Atkinson (atklc@rhodes.edu) if you are interested in submitting a paper or working with the journal.

### Biology Research Award

Each spring, the Biology Department honors a student with its **Award for Outstanding Student Research in Biology**. Any **Biology** student who has completed research at Rhodes or elsewhere is eligible for this award and cash prize. To be considered, a student must submit a three- to five-page research paper, plus a recommendation from the research supervisor. If you are interested

in submitting your work for this prize, please speak to your advisor or to **Dr. Luque de Johnson**. The deadline for applications for this Research Award will be announced in the spring issue of *BIOFEEDBACK*.

### St. Jude Research Program Going Strong

Applications for next year's Summer Plus Research Program will be due January 23rd. Be on the lookout for notices or e-mails informing you of the details. See <http://www.rhodes.edu/academics/1115.asp> for additional information, or contact Dr. Ann Viano (viano@rhodes.edu or x3912).



## BIOFEEDBACK

THE NEWSLETTER OF THE BIOLOGY DEPARTMENT AT RHODES



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