

# BIOLOGUES

A NEWSLETTER OF THE DEPARTMENT OF BIOLOGY OF  
THE THOMAS HARRIOT COLLEGE OF ARTS AND SCIENCES

March 2011

## Looking at Life in the East Dr. Jeff McKinnon, chair

Welcome to 2010-11's *Biologues*! A result of the excellent work of Claudia Jolls, *Biologues* is now back on an annual publishing schedule. Our industrious students and faculty generate volumes of news every year, but Claudia and her colleagues have been succinct and tried to summarize our most important stories in a few pages.

You will read that we have experienced losses through retirements and passings this year, but have also attracted some talented and likeable newcomers. For our more

established people, the awards and accolades just seem to keep piling up.

We move toward the summer and fall of 2011 with trepidation, worried about more cuts and their consequences for our students and coworkers as well as for ourselves. Still, the department has continued to move forward through difficult times before, and I am optimistic that we will do so in the coming year, working together as we always do. In easy times or hard, it is almost always a fine day to be a biologist in East Carolina.



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Left: Owl Butterfly of Panama

Below: Mario Briscoe and Miriam Amjad make friends with an orphaned white-faced capuchin monkey during Terrestrial Tropical Ecology in Panama. Photos by Sue McRae

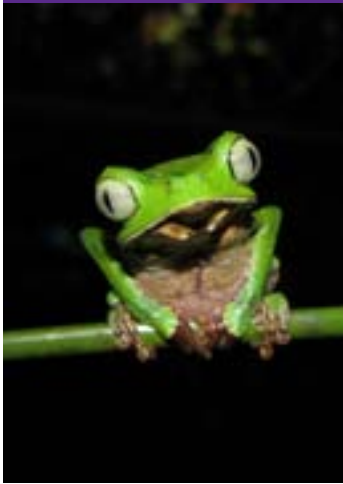


### March 18, 2011: Dedication of the Brinson-Christian Ecology Laboratory Howell S309

Join us *March 18 at 3 p.m.* in *Science and Technology Room 207* to celebrate the naming of the Brinson-Christian Ecology Laboratory, honoring the retirements of these two Distinguished Professors. A reception follows at *4 p.m.* in *Howell Science N109 and Lobby*. This event also includes

reflections on the life and contributions of Professor Brinson. Details at [www.ecu.edu/biology](http://www.ecu.edu/biology).





Above: *Phyllomedusa valliанти* of Manu, Peru, by Tiffany Kosch (IDPBS, Summers Lab)

Below: Chris Hamilton (IDPBS, Bond Lab) holds an amblypygid while collecting in Panama. Photo by Eric Reynolds



## North Carolina Center for Biodiversity East Carolina University

### NCCB, ECU Biology and THCAS Host O'Connor Seminar and Earth Day

The North Carolina Center for Biodiversity (NCCB) enters their second year in support of biodiversity research, education and outreach. With the help of Research and Graduate Studies, the Institute for Coastal Science and Policy, and the Department of Biology, NCCB hosted the Raymond O'Connor Seminar Series on November 11, 2010. Dr. Joshua Lawler, University of Washington, presented "Projected Climate Impacts on the

Fauna of the Western Hemisphere" to the enjoyment of the university community and the public.

We celebrate Earth Day 2011 on April 15, including a lecture by Richard Louv, cofounder and chairman of the Children and Nature Network and bestselling author of *Last Child in the Woods*. NCCB partners with ECU Brody School of Medicine, Department of Pediatrics, the Thomas Harriot College of Arts and Sciences,

ECU Departments of Biology, Chemistry, Health Education and Promotion, the College of Education, the Dept. of Mathematics, Science and Information Technology Education, the Institute for Coastal Science and Policy and the Center for Sustainable Tourism as sponsors for this event. Check out our website and upcoming activities at <http://www.ecu.edu/cs-cas/biology/ncbiodiversity/>.

#### New Faces

**U**NC-CH postdoctoral scholar, Tyrell Carr, Teaching Assistant Professor, molecular biology and genetics of plant-virus interactions (Elizabeth City State, Iowa State University),

**J**on Davenport, Teaching Instructor, animal community ecology (Maryville College, Austin-Peay State University, ECU IDPBS Chalcraft Lab)

**A**shley Egan, Assistant Professor, plant phylogenomics (Utah State University, Brigham Young University)

**G**rant Gardner, Teaching Assistant Professor, science education (Vanderbilt University, North Carolina State University)

**M**ichele Pierotti, Teaching Assistant Professor (University of Bern, Switzerland, University of Hull, UK, University of Padova, Italy) and postdoctoral scholar (McKinnon Lab).

**K**en Riley, Teaching Instructor, fisheries ecology (UNC-Wilmington, Louisiana State University, ECU IDPBS Overton Lab)

**D**ave Rudel, Assistant Professor, development genetics and evolution

(University of Missouri, University of Wisconsin-Madison)

**C**liff Ruehl, Teaching Assistant Professor, plankton ecology, biological oceanography, climate impacts (Trinity University, TX, Texas A&M, Florida International University)

**B**eth Thompson, Assistant Professor, development genetics (Rice University, University of Wisconsin-Madison)

**J**arrett Whelan, Teaching Assistant Professor, hematopoiesis and cancer cell development (Coastal

Carolina University, ECU)

#### Our new staff:

**J**ennifer Cayer (University of Florida, University of Maine) is our new microbiology lab associate.

**J**one Letsinger (Ball State University) joined us in 2009 as our Lead Administrative Assistant.

**C**olleen Rochelle, Research Specialist (Appalachian State University, University of California-San Diego) is the new manager for the Central Environmental Lab.

## In The News

**Tony Capehart**, Associate Professor, animal developmental biology, received a Thomas Harriot College of Arts and Science College Research Award for work investigating synovial joint formation. Tony also was a finalist of the University Alumni Award for Outstanding Teaching, and with Dr. Baohong Zhang, received one of two East-West Research Collaboration Awards for work on regulation of hyaluronidase expression in embryonic joint development and adult osteoarthritis.

**Dave Chalcraft**, Associate Professor, population and community ecology, was awarded tenure and promotion. He also now is an editor for *Oikos*. The productivity in his lab continues to be impressive, including four births: **Ethan Ross to Dave and Heather Vance-Chalcraft**, **Leoria Opa to Jenny and Jon Davenport (IDPBS)**, **Maxwell Lee to Christie and Cliff Ruehl** (postdoctoral scholar), and **Ayden Keyt to Kaysea Singlar and Charles Williams** (MS in Biology).

**Lisa Clough**, Associate Professor, benthic ecology, serves as program director for NSF integrated system science Office of Polar Programs.

**John Conoley**, Information Systems Coordinator and Assistant Teaching Professor, has developed a new mobile version of the departmental website for access from iPhone, iPads, Blackberry and Droid devices. You should be automatically directed to the mobile site if you enter [www.ecu.edu/biology](http://www.ecu.edu/biology) into your mobile browser; you may have to clear your mobile browser cache the first time for this to work. Also, if you want direct access to the mobile site, you can enter [www.ecu.edu/biology/m](http://www.ecu.edu/biology/m). The mobile site is

designed to provide a short cut linking system to existing site content and not replace full site content.

**Jon Davenport** (IDPBS, Chalcraft Lab) authored a NSF proposal with Dr. Winsor Lowe, University of Montana, for three years of Jon's postdoctoral research on coexistence in stream metacommunities.

**Alex Geogakilas**, Associate Professor, now tenured and promoted, won the prestigious Terashima Award from the Japan Radiation Research Society for his contribution in the field of radiation biology and safety. Dr. Geogakilas also serves in editorial capacities for *Radiation Research*, *Journal of Biochemical Technology*, *Molecular Biosystems*, for special issues of *Mutation Research* and *Current Molecular Medicine* as well as a book on cancer prevention.

**Carol Goodwillie**, Associate Professor, plant mating system evolution, now serves on the executive board of the Botanical Society of America and is an Associate Editor of the *American Journal of Botany*. With new funding from NSF, she is expanding the research program at the West Research Campus long-term ecology plots to explore the effects of nutrient addition and disturbance on population genetic diversity of target plant species.

**Jinling Huang**, Assistant Professor, continues his research work on horizontal gene transfer. He works to understand the historical distribution of plastids and gene transfer in eukaryotes.

**Claudia Jolls**, Associate Professor, plant ecology and conservation, was a finalist for the Board of Governors Award for Excellence in Teaching 2010. The award recognizes the sustained record of distinguished teaching

by tenured ECU faculty.

**Jo (nee Tyson)** and Johnny Kelley were wed on Christmas Eve, December 24, 2010, in Las Vegas, Nevada...twice: once with a man of the cloth and then again with Elvis himself!

**Joe Luczkovich**, Associate Professor, food web ecology and bioacoustics, with graduate students Cecilia Krahforst (CRM), Lyndell Bade (MS in Biology), undergrads and colleagues in ECU Geography and the National Atmospheric and Oceanic Administration (NOAA) are using satellite and aerial imagery to monitor the change in submerged aquatic vegetation in NC coastal waters.

**Jeff McKinnon**, Professor and Chair, sexual selection and speciation, is hosting visiting research scholar Ruqing Guo (Nanjing, China) 2010-12 and recently hosted longtime collaborator Fadly Tantu (Tadulako University, Sulawesi, Indonesia) for a two week visit.

**Sue McRae**, Assistant Teaching Professor, avian behavioral ecology and social evolution, **Kyle Summers**, Professor, evolution, and **Joe Luczkovich**, Associate Professor, food web ecology and fish bioacoustics, continue their summer hands-on learning experience in Tropical Biology in Panama for students.

Below: Students in Plant Vegetation Sampling compare changes in the floristic community in response to mowing and fertilization at West Research Campus.



## More News

**Roger Rulifson**, Professor, fisheries, has been awarded the Provost's and Vice Chancellor for Academic Affairs' Scholar-Teacher Award, in recognition of faculty members who effectively integrate research/creative activity in classroom teaching.

**Margit Schmidt**, Teaching Assistant Professor, immunology, received an ECU teaching grant for a virtual microbiology website <http://myweb.ecu.edu/schmidt/virtualmicrobiology.html>

**Matt Schrenk**, Assistant Professor, astrobiology, and his lab continue to conduct work on the exploration of high pH microbial ecosystems of serpentinized deep Earth rocks in Newfoundland Canada, Italy and California, with collaborators from NASA's Astrobiology Institute. Schrenk helped induct ECU into the North Carolina Space Grant, a consortium of 13 NC universities which uses space to advance research, science education and public outreach.

**John Stiller**, Associate Professor, molecular evolution and comparative genomics, is now a Board of Governors Distinguished Professor for Teaching. He continues to serve as a principal investigator on the *Porphyra* Genome Project and Co-Director of the NSF-sponsored Algal Genomics Research Coordinating Network. He also has been appointed as an Academic Editor for PLoS One.

Associate Professors **Ed Stellwag**, vertebrate evolution, **Anthony Overton**, fisheries biology, and Assistant Professors, **Xiaoping Pan**, biochemistry, and **Baohong Zhang**, have received support from NSF (RAPID) to determine how exposure to the Deepwater Horizon oil spill in the Gulf of Mexico may impact fish development and survival. Using zebrafish as a model

and comparing development defects in fish in the field, the researchers will address whether crude oil-induced development defects are restricted to a limited collection of development processes or whether they are simply the result of overt toxicity. Check them out PBS Newshour [http://www.pbs.org/newshour/bb/environment/july-dec10/fish\\_12-31.html#](http://www.pbs.org/newshour/bb/environment/july-dec10/fish_12-31.html#)

**Kyle Summers**, Professor, Evolution, received ECU's Five Year Research Award and a research grant from the National Geographic Society for work on Peruvian poison frogs. Dr. Summers also was nominated for a THCAS Distinguished Professor Award, following in the footsteps of Professors Brinson and Christian of Biology.

**Lee Sutton**, Teaching Assistant Professor and biology advisor, human anatomy and physiology, has been working with NC Maritime Museum and Rotary Clubs in coastal NC on Biography of Man and Civilization, an astronomy-based lecture series focusing on derivation of science through astronomy (not astrology!!). Lee and Brooks are staying active keeping up with daughter Mills (1 yr) and son Charlie (4 yr).

**Heather Vance-Chalcraft**, Teaching Assistant Professor, aquatic ecology, and **Claudia Jolls** continue as co-PIs with colleagues in the College of Education on the NSF-funded "ECU Noyce Scholars", a scholarship and training program to place B.S. in mathematics and science graduates in high need public classrooms.

**Terry West**, Associate Professor, invertebrate ecology, Director of Graduate Studies, is now appointed as Director of the Interdisciplinary Program in Biological Sciences (IDPBS).

**Baohong Zhang**, Assistant Professor, microRNA evolution, comparative genomics and molecular genetics, along with **John Stiller**, received funding for "Strengthening the Global Competence of ECU Faculty and Students through a Collaborative Partnership with China in Plant Genomics and Biotechnology." This USDA award supports summer travel, education and research opportunities for ECU students and faculty in China.

## Visitors

**Dr. Michele Pierotti**, postdoctoral associate, continues his work with Dr. **Jeff McKinnon** on aspects of sexual selection, genomic conflict and speciation in fishes. Dr. Pierotti also served as a Teaching Assistant Professor in non-majors biology.

**Dr. Alejandro Yáñez-Arancibia** is the recipient of the 2011-2012 Thomas W. Rivers Distinguished Professorship in International Affairs. ECU Biology and the Institute for Coastal Science and Policy sponsored his application seeking to further efforts to promote international understanding. Dr. Yáñez-Arancibia is co-teaching the course "Ecological Responses to Climate Change" with Dr. **Enrique Reyes** and interacting with students and faculty across campus. He is a Senior Scientist and head of the Coastal Ecosystems Unit, Institute of Ecology A. C. Mexico.



Hourglass Frog of Peru.  
Photo by Evan Twomey (IDPBS, Summers Lab)

## **Passages: In Memoriam**

### **Clifford B. Knight (1926-2010)**

Dr. Clifford B. Knight, 84, died on Thursday, Nov. 25, 2010 at his home. Born and raised in Vernon, Connecticut, He served in the army during World War II, then attended U. Connecticut and Duke University, where he received his Ph.D. in Biology. Dr. Knight was a faculty member of ECU Biology Department from 1956-1998 and was the first professor at ECU to publish in the prestigious journal, *Science*.

Dr. Knight was an avid painter, a self-taught artist who excelled in painting landscapes, seascapes and animal life, several of which were exhibited at Greenville City Hall through the Greenville Museum of Art Artist Association, Clothesline Art Show, Pitt County Arts Council Show at Emerge and the Bob Pittman Art Studio Show. Cliff enjoyed working with fellow artists through Greenville Brushstrokes. Most Thursday afternoons he could be found painting at Greenville Recreation and Parks Department with the Different Strokes artist group.

He was preceded in death by his wife, Suzanne Williams Knight, and is survived by daughter, Kimberly Knight Moskowitz of Silver Spring, MD; son, Christopher B. Knight of Winterville; sister, Patricia Knight Klinck of Louisville, KY; and grandchildren, Abigail and Hannah Moskowitz of Silver Spring, MD.

In lieu of flowers, memorial contributions can be made to UHS Home Health and Hospice, PO Box 6028, Greenville, NC 27835, to the attention of the hospice program, or Greenville Recreation and Parks, P.O. Box 7207, Greenville, NC 27835, to the attention of Julianne Blackburn.

### **Mark M. Brinson (1943-2011)**

ECU Biology, the university and the professional community mourn the premature and unanticipated loss of our dear friend and colleague, Professor Mark M. Brinson. We reproduce his obituary here.

Professor Mark Brinson came to ECU in 1973 after completing his doctoral degree from the University of Florida. He taught numerous courses in ecology and biology. Throughout his career, Professor Brinson authored or co-authored many publications pertaining to his research. Applying his research, he served as a technical consultant providing feedback and advice to the US Environmental Protection Agency, US Fish and Wildlife Service and the Smithsonian Institute. He also served as president of the Society of Wetland Scientists. In addition, Professor Brinson received many honors and awards, including the Thomas Harriot College of Arts and Sciences Distinguished Professorship, ECU's Board of Trustees Lifetime Achievement Award, a National Wetlands Award for Science Research cosponsored by the Environmental Law Institute and the Environmental Protection Agency, and a Fellowship of the Society of Wetland Scientists.

He is survived by his wife of 40 years, Leslie Brinson, of Greenville; son, Peter Brinson and wife, Suzanne; granddaughter, Sylvie, all of Pasadena, CA; sisters, Sara Gregor, of Saginaw, MI, and Judy Reed, of Shelby, OH; and a brother, Bob Brinson, of Shelby, OH.

In lieu of flowers, please send a contribution towards scholarships for ECU Biology students, Checks should be made out to "ECU Foundation, Inc., Biology Scholarship Fund" and include "In memory of Mark Brinson" on memo line. Please send to Tammy Garris, ECU Director of Gift Records, Greenville Centre, 2200 S. Charles Blvd., Greenville, NC 27858.



View of the Panama Canal by Sue McRae

### **Mark**

One of my colleagues died today,  
A "Distinguished Professor",  
An internationally respected  
Wetlands ecologist  
And environmental biologist.

We were both 4th Floor Howell boys,  
His lab on the south side;  
Mine on the north.  
We both held Biology Professorships  
But never discussed Biology.

We talked only about literature,  
Did so for 20 years.  
He was fresh air  
Following my afternoon dissections  
With ragamuffin sophomore anatomy students.

I would stroll down the hallway,  
His door always open at 4pm...  
Just as he was always open to  
Kathleen Norris, Larry Brown, Robert Pirsig,  
Charles Frazier, Joan Didion, Cormac McCarthy *et al.*

We exchanged novels, memoirs,  
Poetry and historical non-fiction.  
I gave him *Dakota: A Spiritual Geography*,  
*Slouching Towards Bethlehem*.  
He gave me *On the Road* and *Lila*.

We read and discussed our exchanges,  
We both liked "interesting words",  
"Possible universal truths"  
"The rough but sensitive South"  
But never talked ecology or anatomy...

I thought of him  
The day he died-  
He was born in '43; me in '42.  
I remember saying to myself:  
Mark will enjoy *Unbroken*.

A sincere casual companion  
Who didn't take himself so seriously,  
I will miss his relaxed conversations,  
Literate perceptions;  
His smiles turning to laughter.

**Hal J. Daniel III, professor emeritus**

## ***Drs. Singhas, Brinson and Christian retire*** ***contributed by Cindy Putnam-Evans, Claudia Jolls and the ECU News Bureau***

In April 2010, Biology gathered at Boyd Lee Park to celebrate the 23 years of teaching, research and service from former Director of Undergraduate Studies, Chuck Singhas. A professor of anatomy and physiology, Dr. Singhas received his PhD from the University of Virginia in the area of reproductive endocrinology. He mentored both MS and undergraduate Biology majors, and taught numerous courses in anatomy, physiology, endocrinology, histology, developmental and reproductive biology. In his role as Director of Undergraduate Studies, Chuck worked tirelessly to ensure that students were enrolled in the courses they needed for their timely graduation. To Dr. Singhas, his students were like family; he often went above and beyond the normal expectations of faculty to help them. He was well known for his end of the semester cookouts and for field trips to his 600-acre farm in West Virginia, where he was often accompanied by faculty, staff and students. He was a long time member of the university Institutional Review Board, which governs human subjects research. One of the things he will best be remembered for is cooking the pig at the annual Biology cookout, and yes, Chuck cooked the pig for his retirement celebration!

On August 28, 2010, the Department of Biology celebrated the retirements of Drs. Mark Brinson and Bob Christian with a public symposium, hosted together with the Institute for Coastal Science and Policy, "Wetlands at Risk: New Scientific Insights into Critical Ecosystems." Invited speakers included Linda K. Blum, University of Virginia, Ronald E. Ferrell, PBS&J Corp., Aaron L. Mills, University of Virginia, Robert Twilley, University of Louisiana-Lafayette and Pierluigi Viaroli, Università degli studi di Parma, Italy. Later that evening, more than 120 people gathered at the Hilton of Greenville to celebrate Brinson and Christian, as professionals and as people.

Mark Brinson came to ECU in 1973 after completing his doctoral degree from the University of Florida. He has taught courses in ecology, wetland ecology and management, restoration ecology, introductory biology and environmental biology. He has directed 24 master's theses and one doctoral dissertation. Throughout his career, Brinson authored or co-authored many publications pertaining to his research, including

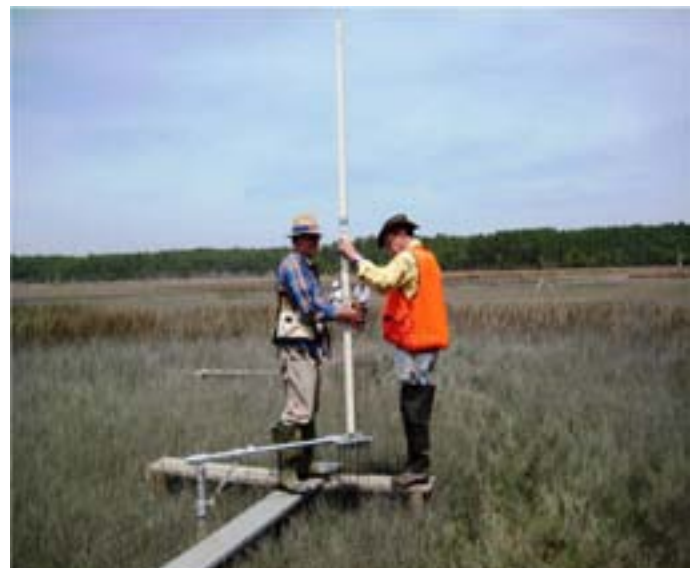
49 journal publications, more than 60 reports and book chapters, as well as five book reviews. Over the past 37 years, he received approximately 40 research grants that total more than \$2 million. Brinson served as consultant providing feedback and advice to the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service and the Smithsonian Institution.

Mark received many honors and awards, including the Thomas Harriot College of Arts and Sciences Distinguished Professor Award, ECU's Board of Trustees Lifetime Achievement Award, a National Wetlands Award for Science Research cosponsored by the Environmental Law Institute and the Environmental Protection Agency, and a Fellowship of the Society of Wetland Scientists.

Bob Christian received his doctoral degree from the University of Georgia in 1976. He came to ECU in 1981, after serving as an assistant professor at Drexel University in Philadelphia. While at ECU, he has taught many courses, including principles of biology, principles of microbiology, microbial ecology and marine community ecology. He has directed 17 master's theses and two doctoral dissertations.

While teaching, Bob has conducted research in the areas of coastal ecosystems, particularly salt marshes, estuaries and coastal lagoons along the Atlantic and Gulf coasts. More recently, he has been involved in studies of headwater streams within the coastal plain. He has published or co-authored more than 60 journal publications and 40 book chapters, and participated in more than 125 presentations within his areas of research. Christian also has received 34 research grants that total more than \$3 million.

Of his many honors and accolades, Christian has received the Thomas Harriot College of Arts and Sciences Distinguished Professor Award, an ECU Lifetime Achievement Award in Research and Creativity, and a Fellowship of the American Academy of Microbiology. He also is a member and has served as a board member or official of several organizations, including the American Institute of Biological Sciences, Coastal and Estuarine Research Federation, Southeastern Estuarine Research Society and the Ecological Society of America.



## Under the Microscope

**D**r. Xiaoping Pan, Beth Thompson and David Rudel joined the ECU Department of Biology as tenure-track Assistant Professors in 2009-2010.

**Xiaoping Pan** writes about herself as follows:

**I** was born in the small beautiful city of YiZhou in Southern China. Influenced by my Dad, a professor in Physics, for a long time I thought I might become a scientist in Physics. My Mom, however, an accountant, really wanted me to be a medical doctor. The tremendous changes my motherland China has undergone in its role as the “world factory” brought prosperity, severe pollution problems and my inspiration. Skies were no longer blue; fishes disappeared in the rivers...I strongly felt that I needed to become an environmental scientist!

**L**ike all the “good” and well-disciplined kids, I did very well in school and was accepted into one of the top universities in China, Nanjing University, where I had the chance to meet many world-class mentors and professors. Visit Nanjing if you travel to China. What a beautiful and interesting modern city with “old-fashioned” culture.

**I** am so grateful to my undergraduate thesis mentor Professor Chao Xu who first introduced to me how biochemical toxicology can be applied to solve environmental problems, specifically, to figure out the mode of actions of environmental toxicants and help protect humans and wildlife. I still remembered being fascinated watching “phagocytosis” (cell feeding) under the microscope in the Xu lab.

**I** was very lucky to have Dr. George Cobb as my PhD advisor at Texas Tech University. Dr. Cobb is known as a “tough” yet very knowledgeable professor. Students like to knock on his door to ask questions but try to avoid him as a committee member! “You will become stronger when accomplishing the “tough” task,” Dr. Cobb said. He was right; I guess I passed. My sincere thanks to you George.

**G**reenville, NC is my home now with my dear husband Baohong and 4 month old son Henry (Liheng). It has been such a pleasure to work with a group of outstanding and supportive colleagues in ECU Biology. Check out my lab and research at [http://www.ecu.edu/cs-cas/biology/pan\\_xiaoping.cfm](http://www.ecu.edu/cs-cas/biology/pan_xiaoping.cfm).

**Dave Rudel** joined ECU Biology in August 2009. Originally born in Colorado, Dave is son to a father with a PhD in agricultural economics and a mother who is an analytical chemist. From Colorado to South Dakota, the family alighted in Missouri where both Dave’s parents served as faculty/staff at U. Missouri-Columbia. There, Dave pursued a dual degree in biology and economics, which seemed the natural synthesis of his love of organisms, mathematics, art, cooking and wine-making. When asked why he choose biology, Dave replied, “What’s there not to like about “gee-whiz”...there’s like dinosaurs and whales!”. From his baccalaureate, Dave went to U. Wisconsin-Madison for his doctoral (“Each step took longer than I had hoped.”)

**D**ave’s interest in molecular and developmental biology was a natural progression from his passion for living patterns and understanding how an animal axis develops. “I realized, ‘I really like this!’” His graduate training demonstrated to him that projects hardly ever go as planned, however, “The story is as interesting as your ability to find something interesting.”

**T**he next obvious step was postdoctoral study, given Dave had always wanted to be an academic. What appealed about the university gig? “You can follow up on the questions that you want to ask. You have to work really hard yet you set your own schedule.” While he had postdoctoral opportunities at Seattle (“I always wanted to live in Seattle; I applied there as an undergrad, grad and postdoc. Yet something always looked better.”), University of Oregon, Stanford and Cambridge, UK, the newly minted David Rudel, PhD, ended up at the Max Planck Institute for Developmental Biology in Tuebingen, Germany from 2001-2008. There he developed his active program in development using the nematode *Caenorhabditis elegans* and its allies as models for animal development. When asked why he didn’t do that postdoc in Seattle or elsewhere, “Having come from worms, what you can actually do in fish is really limited.” Rudel and his laboratory study the evolution and development of animal architecture, such as gonadogenesis in nematodes, to address larger questions of how changes in organ morphology have led to the development of new animal body plans, new species and expansion into new ecological niches.

**W**hen he’s not doing his science, Dr. Rudel loves to cook, fly-fish in the mountains with his Idaho biologist brother and travel. At the time of this writing, Dave confessed that were it not for other obligations, he would be in Rome. He also admits to being “very much a collector”, including some spectacular furniture, glassware, pottery and medieval art. While we are not Seattle, Rome nor Tuebingen, Dave values his interactions at ECU...“exceptional... no one has ever turned me down.” Dr. Rudel also is passionate about teaching. From his undergraduate days as a mathematics and economics tutor and biology grader, he realized he liked working with students who want to learn. He admits, albeit sheepishly, “I like the teaching, to be honest...I like to try to get grads to read papers and understand the figures.” Rudel also admits affection for his students in introductory biology for intended majors...“They arrive as freshmen, all ultra-excited. It’s kinda cool; it makes me excited.” Professor Rudel is more than “kinda cool”, too, and we are ultra-excited to have him with us.



Left: Mariam Amjad trips the light fantastic with a caiman in Tropical Terrestrial Ecology in Panama. Photo by Sue McRae.

This from new faculty in developmental genetics,  
**Beth Thompson.**

I was born and raised in Granville, Ohio, a small town in central Ohio. I always loved math and science, but due to scheduling issues and changing high schools, never took high school biology. I decided to go to Rice University as an undergraduate because I wanted to get out of my “comfort zone”; Houston, Texas (the 4th largest city in the US) was certainly different from Granville, Ohio (with only ~5000 people)!

I initially wanted to go to medical school and decided to major in Biochemistry. I chose biochemistry instead of Biology because somehow I decided that it would be easier to take Physical Chemistry and Molecular Biophysics than extra Ecology and Evolution classes. What was I thinking? I double majored in Philosophy, in part inspired by a great Philosophy class I took in high school. My junior year I finally was able to take upper level bio classes and learned more about how science was done. I discovered that I really loved the process of science and was completely wowed by the way biologists ask and answer scientific questions. I went to my advisor and told him that I wanted to go grad school; he recommended I join Dr. Bonnie Bartel’s lab. I was initially disappointed. Dr. Bartel works on plants and I still had my biomedical bias, yet I followed my advisor’s advice anyway (*Editor’s note: There is a lesson here. CLJ*). I completed a senior thesis in Dr. Bartel’s lab working on an enzyme that functions in auxin (a plant hormone) metabolism. I learned great lab skills in Bonnie’s lab and discovered my true love of genetics (and that plants were a great system).

I applied to lots of grad schools and ultimately decided to go to University of Wisconsin-Madison because it was a good fit both for me and Eric (my significant other who is a geologist). In grad school, I knew I was going to study either plants or worms. I made this decision largely by process of elimination. I knew I wanted to do genetics and I 1) refused to work on a vertebrate, 2) flies were gross (sorry fly people!), and 3) yeast phenotypes were boring (dead or alive). That left worms and plants. I looked at both worm and plant labs and ultimately decided to work in Judith Kimble’s lab for my Ph.D. My thesis focused on how a couple of RNA binding proteins control stem cells and sex determination in the *C. elegans* germ line. Since I chose worms for my Ph.D. I always thought I would go back to plants for my post-doc. I put together a list of labs that I was interested in and went to talk to Rick Amasino, a great plant biologist who works downstairs from the Kimble lab. All the labs on my list worked on *Arabidopsis* (the lab rat of the plant community), but Dr. Amasino suggested I look at Sarah Hake’s lab at UC-Berkeley, if I wanted to do plant developmental genetics. The Hake lab works on maize (corn). I never thought I would work on corn (it’s too slow), but she had done some really great work, so I interviewed. I loved it! Corn is one of the premiere genetic systems and has the best phenotypes. I was sold.

I spent a little over three years in the Hake lab learning maize genetics and then moved to ECU to start my

own lab. We decided to move here because Eric got a tenure-track job in the Geology Dept. and I was offered the position in Biology (the Holy Grail!). We have an 18-month old son, Elias, who keeps us very busy. I love the wilderness and go backpacking and camping as much as I can. I love to read and knit. Crossing things off lists is one my greatest pleasures.

We are grateful to the search committees who were responsible for the appointments of these two first class colleagues.

### **Undergraduate Studies** **Dr. Mary Farwell, Director** **Professor, cell biology**

The Biology Department continues to be popular among undergraduate students. We have 376 declared Biology majors, 37 declared Undergraduate majors, and approximately 400 undeclared majors, graduating about 130 students every year. The number of credit hours taught for service and foundations curriculum courses exceeds 60% of our total credit hours, making us a very essential department for the campus. Many of these service courses are for pre-nursing students, whose numbers are also increasing.

Recently we began a discussion among the faculty to R examine the structure of our BS Biology curriculum. Comparing biology curricula across similar institutions, we determined our program was among the more unstructured in terms of required biology content. Thus, we are currently making changes in our core courses. One major change will involve offering more sophomore-level courses, which will eventually become core courses (cell and developmental biology). We also have decided to require at least one statistics course.

O ur students are very successful at research. Up to 30% carry out undergraduate research in any given semester and consistently excel at on-campus and off-campus presentation events. In 2010, a majority of the award winners at Research and Creative Achievement Week were Biology students working in labs in Biology, Chemistry and Brody School of Medicine.

W ith the initiative of Dr. Ed Stellwag, we have revamped our Internship course. Dr. Stellwag has made contacts with several local industries to give more opportunities to all of our undergraduates wishing for a meaningful internship experience.

#### **What Next?**

##### **Interested in a Career in STEM Teaching?**

Receive up to \$17,600 of support for teaching certification or a Master of Arts in Teaching as a National Science Foundation ECU Noyce Scholar. Applications are being **accepted now** from strong students in STEM fields (undergraduate majors or B.S. degrees in biology, chemistry, engineering, geology or mathematics). Check out <http://www.ecu.edu/cs-educ/msite/Noyce/index.cfm> or contact Drs. Claudia Jolls ([jollsc@ecu.edu](mailto:jollsc@ecu.edu)) or Heather Vance-Chalcraft ([vancechalcraft@ecu.edu](mailto:vancechalcraft@ecu.edu))

## Graduate Studies

**Dr. Terry West, Director  
Associate Professor,  
invertebrate ecology**

We welcome four 2010-2011 ECU Graduate Scholars: **Carol Brackett** (McRae Lab), **Caitlin Burklew** (Zhang Lab), **Lindsay Leverett** (Jolls Lab) and **Adam Stuckert** (Summers Lab), who qualified for this award by having an undergraduate GPA  $\geq 3.5$  and a combined verbal and quantitative GRE score  $\geq 1100$ . Graduate Scholars (limited to incoming Master's students) each receive an award of \$4000/yr for two years. These four join a splendid group of 29 other MS students of our 2010-11 cohort.

We also welcome five Biology IDPBS students: **Nicole Garrison** (Bond Lab), **Scott Jones** (Chalcraft Lab), **Bridget Nelson** (Schrenk Lab), **Chunlin Yang** (Stiller Lab) and **Yangqiong Zhang** (Pan Lab), as well as two CRM students: **Andrea Dell'apa** and **Chad Smith** (Rulifson Lab).

## Biology Graduate Student Association

**Chad Hunter, BGSA President**

The Biology Graduate Student Association (BGSA) is now more active in organized events along with providing support for professional travel. BGSA students organized an exhibit at the Eastern North Carolina Science Festival, sponsored by GO-Science, and aided young children in extracting DNA from strawberries (**Shruti Saxena**, Stiller Lab) and meeting **Tiffany Kosch's** (Summers Lab) pet snake, the evening highlight. "Haunted Howell" returned for Halloween (**Heather Blumenfeld**, Schrenk Lab), a science-based haunting that raised >\$500 to support research travel.

**Michael Brewer** (Bond Lab) helped organized Undergraduate Research Poster Recruitment Day to highlight undergraduate research opportunities.

Thanks to **Michael Smith** (Pan Lab), BGSA now participates in NC DOT Adopt-A-Highway. Look for us picking up trash along Greene Street, keeping Greenville green.

## Award-winning Students Undergraduates

**Blind Award (\$1000): Brittany Carr**, Mount Olive, NC, worked with Dr. Goodwillie on plant hybridization. As an Early Assurance Scholar, Brittany will attend medical school after a 2011 graduation and plans to practice in her native Duplin County, helping HIV patients.

**Bunting Award (\$1000): Dino Maglic**, from Statesville, NC, researched nutrient and disturbance effects on bacterial communities (Goodwillie and Schrenk Labs) and cancer cell proliferation (Sigounas Lab, BSOM). He plans to graduate in May 2011 then pursue a MD/PhD.

**Helms Award (\$2000): Ian Bryan**, Greenville, NC, carried out research in the DeWitt Lab (BSOM). Ian plans to graduate in May 2012, complete medical school and pursue a career in pediatrics.

**Helms Award (\$500): Aaron Yerke**, Cornelius, NC plans to attend medical school after finishing his biology degree, May 2011.

**Kalmus Award (\$500): Lauren Polli**, from Cary, NC, is interested in pursuing a career in disease-related research. Lauren has studied alkaliphilic bacteria of high pH springs in Canada and from the coast of Sicily, in Dr. Schrenk's lab. She plans a May 2011 graduation.

**Kalmus Award (\$500): Isaac Morton**, Greenville, NC, dual major in biology and chemistry, carried out research with Dr. Goodwillie on microsatellite DNA and population genetics. Issac has been accepted to the first class of ECU School of Dental Medicine for Fall 2011.

**University Book Exchange Award (\$500): Idada Odinaka**, Durham, NC, has participated in immunological research at ECU and NC Central University. Dee Dee plans to pursue research in immunology after a May 2011 graduation.

**ECU Research Week Awards:**  
**E Amandeep Gujral**  
(Schrenk and Goodwillie Labs)  
**Akarsh Manne**  
(Putnam-Evans Lab)

**Partha Nagdhowdhuri**

(Capehart Lab)

**Emilee Quinn and Brittany Carr**  
(Goodwillie Lab)

## Graduates

Biology Advancement Council  
Next Step Scholarship (\$5000):

**Jesse Delia** (Summers Lab)

Boyette Award (\$500):

**Thomas Kryston** (Georgakilas Lab)

Martha N. Jones (\$1500):

**Robert Deans** (Chalcraft Lab)

Martha N. Jones (\$500):

**Molly Albecker**

(Vance-Chalcraft Lab)

James S. McDaniel Award (\$1000):

**Michael Armstrong** (Pan Lab)

James S. McDaniel Award (\$1000):

**Chad Hunter** (Christensen Lab)

Graduate Teaching Award (\$500):

**A. Lynn Swafford** (Bond Lab)

**Megan Brock** (Smith Lab, BSOM)

Other outstanding graduate teaching assistants include **Robbie Deans** (Ecology), **Chris Hamilton** (General Biology), **Thomas Kryston** (Microbiology), **David Huffman** (Human Anatomy & Physiology), **Shane Wright** (General Biology), **Celilia Krahforst** (CRM, Luczkovich Lab) won best paper by the Atlantic Estuarine Research Society for work on sonar id of aquatic vegetation.

## Where Are They Now?

**Dr. Jason Brown** (IDPBS, 2008, Summers Lab) and **Jennifer Weber** (MS, 2008, Goodwillie Lab) live in Irvine, CA where Jen is finishing her PhD. Jason divides his time between Irvine, Duke, Ann Arbor, MI, Germany and Madagascar as a postdoc affiliated with three labs, working on computational analysis of phylogeography.

**Hal Daniel**, professor emeritus, still writes poetry at Otter Creek Farm. Professor Daniel also teaches A&P to nursing students at Edgecombe Community College, with his former graduate student, **Bruce Panneton** (BS 1996, MS 2004), ECC chair of Biology. Says Hal, "Be nice to your grad students; they may be your boss one day."

**Dr. Sarah Johnson** (MS 2004, Jolls Lab) received her Ph.D. from the University of Wisconsin-Madison in plant ecology and now joins the faculty at her *alma mater*, Northland College in Ashland, WI.

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<http://www.ecu.edu/devt/>

Our 2010-11 goal is to fund two new "Next Step" scholarships per year, at \$5000 each, to help us recruit, retain and support the best undergraduates and graduates, so our students and our program can make the next step in excellence.

For endowment of graduate research assistantships  
and sponsorship of biology classrooms,  
kindly contact

Dr. Jeff McKinnon at [mckinnonj@ecu.edu](mailto:mckinnonj@ecu.edu) or (252) 328-5258

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Please log in at the Alumni Registration Form  
[http://www.ecu.edu/cs-cas/biology/alumni\\_registration.cfm](http://www.ecu.edu/cs-cas/biology/alumni_registration.cfm)

Editor's Note:

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