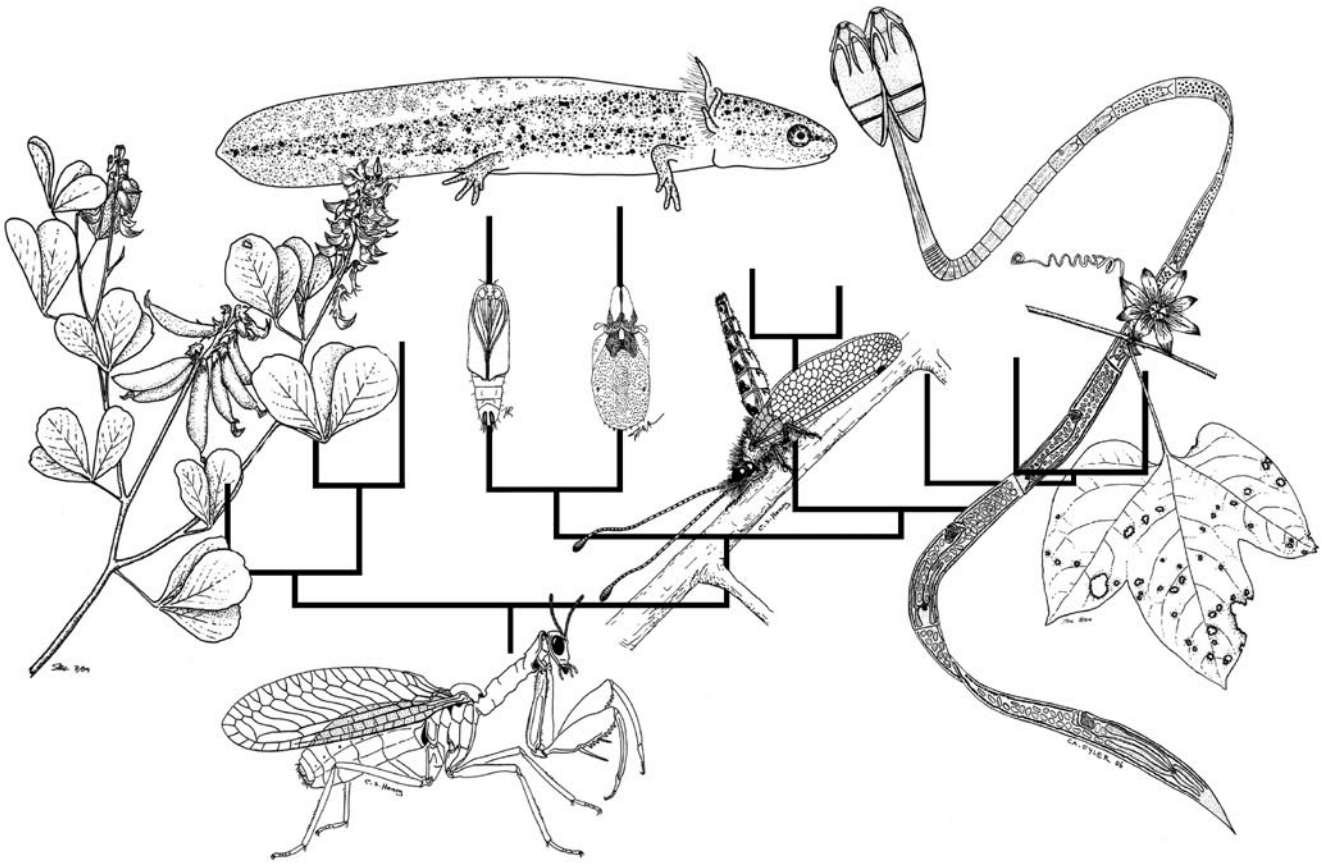
# ECOLOGY AND EVOLUTIONARY BIOLOGY

NEWSLETTER 2006 NUMBER 12



# Welcome from the EEB Department Head

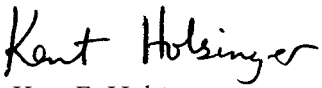
Dear EEB Associates and Friends:

Welcome to another edition of the EEB Newsletter. Last fall about half of the faculty and students in the department moved into new offices and laboratories in a building shared with the Department of Physiology & Neurobiology (PNB) and the School of Pharmacy. We were delighted to be reunited with our colleagues and friends in PNB and to make new friends in the School of Pharmacy. The University sponsored the official opening of the building in October 2005 complete with a half-day scientific symposium, speeches, and a ribbon-cutting ceremony. But as you know, members of EEB also have a sense of humor, so we co-sponsored a "frog-warming" in early April with PNB and Pharmacy. You'll read Pheeby's story elsewhere, so I won't repeat the details here except to say that Pheeby is already very much a part of the shared traditions developing in the new BioPharm building.

The past year saw two important staff changes. Matt Opel, who received his Ph.D. in 2004, working with Cindi Jones, joined Clint Morse and Sandy Ek in January 2005 as a third, full-time staff member caring for living plant collections. We are delighted to have three, full-time staff in the greenhouses, especially as we look toward plans for an eventual replacement of the Torrey Life Sciences building and the need both to redesign our existing greenhouses and to care for our collections during the transition. Shortly after Matt started, we learned that Andrew Doran would leave his position as collections manager at the end of February to take a position as Administrative Curator of the University and Jepson Herbaria at the University of California, Berkeley. Although we were sorry about Andrew's departure, we now have a national search underway, and we hope to have a new collections manager with us by the start of fall semester.

Outstanding students have always made this department a very special place to be, and you'll be pleased to know that our students are as outstanding now as they have ever been. To pick just two examples: (1) Three of our students were awarded Doctoral Dissertation Improvement Grants from the National Science Foundation this spring (Maxi Polihronakis, Jadranka Rota, and Krissa Skogen) and another (Nanci Ross) received a major award from the Garden Club of America. (2) This spring the annual graduate student symposium also celebrated its fifteenth anniversary, and once again every talk was better than those I typically see at national meetings. I am proud to be part of a department that has such exceptional students.

Best wishes,



Kent E. Holsinger
Acting Department Head

Cover drawing by: Carrie Fyler, EEB

# VIDEO EVIDENCE OF IVORY-BILLED WOODPECKER RE-EXAMINED

Chris Elphick

**Chris Elphick** co-authored a paper published in March 2006 in the journal *Science* that challenges one of last year's top science stories – the rediscovery of the Ivory-billed Woodpecker. The video identification of the Ivory-billed Woodpecker in The Big Woods of Arkansas, a 550,000-acre corridor of floodplain forest that follows the bayous and rivers that flow into the Mississippi River, created headlines and excitement like few other discovery stories late last spring. In the peer-reviewed technical comment published in *Science*, world renowned ornithologist David Sibley and three co-authors including Dr. Elphick argue the identification of the ivory-billed is in doubt.

The controversy centers around the image on the video taken by an engineering professor from the University of Arkansas as his canoe came within 20 meters (approximately 65 feet) of a large Water Tupelo tree in the swampy Big Woods. Four seconds of blurry flight were captured on tape as the bird flew away from the boat toward the woods.

The video has been extensively analyzed, frame-by-frame by Sibley and his co-authors, as well as by the Cornell Laboratory of Ornithology scientists who were the lead authors of the original publication last June. Sibley's group believes the video shows the fairly common Pileated Woodpecker rather than an Ivory-billed. The Cornell scientists dispute Sibley's findings. The Ivory-billed Woodpecker was last sighted in Louisiana approximately 60 years ago and was thought to be extinct.

The outcome of this controversy could have an affect on conservation efforts in the Big Woods, one of the last remaining large tracts of old-growth bottomland hardwood forests in the South. Following last spring's identification of the Ivory-billed, more than $10 million in funding was announced by federal and private agencies to preserve the rare bird and its remaining habitat.

Both groups of scientists, however, say conservation efforts in Arkansas should continue because the habitat is important for many species of wildlife whether the Ivory-billed is there or not.

Elphick, who won a prestigious Partners in Flight award in 2004 for his work on bird conservation, and recently received a grant from the National Audubon Society to review what is known about the use of agricultural lands by waterbirds, says it was "devastating" to find, after thoroughly examining the Cornell video, that the bird did not appear to be an Ivory-billed Woodpecker.

The Sibley paper is the result of work by two independent teams that carefully examined the evidence shortly after the Cornell find was announced. Sibley, considered by many to be the successor to the late Roger Tory Peterson, observed many Pileated Woodpeckers over an eight-day period in The Big Woods but no Ivory-billed. Upon his return and re-examination of the Cornell video, he recognized the flight patterns and markings as those of the Pileated. The Ivory-billed is larger than the Pileated with, as indicated by its name, an ivory bill, and a different wing pattern. A key feature which distinguishes the two birds is the pattern of black and white on the wings.

Elphick, who was one of the editors Sibley's *"The Sibley Guide to Bird Life & Behavior,"* said it was the appearance of the extensive white on the wings of the bird in the video that led him to believe it was an Ivory-billed at first. Upon closer examination, however, he noted everything in the video could be considered normal for a Pileated Woodpecker and some of the clearer features matched of a Pileated but not an Ivory-billed.

The Sibley group's challenge does not mean Ivory-billed Woodpeckers do not exist says Elphick. There have been other credible sightings over the years; however, none has led to evidence that can be consistently verified by independent investigators.

Last year's identification was "like a ray of hope, so many species are disappearing," notes Elphick. "We're still really hoping that it's there, and it may be."

*Adapted from an article by*
*Cindy Weiss, UCONN Advance*

# EEB PROFESSOR ORGANIZES EFFORT TO ASSESS BIODIVERSITY AND CONSERVATION VALUE OF AGRICULTURAL LANDSCAPES OF MESOAMERICA

Robin Chazdon

With funding from the National Center for Ecological Analysis and Synthesis in Santa Barbara, California, **Robin Chazdon** and colleagues organized a three-phase working group involving scientists from the US, Europe, and Latin America. The objective of the working group is to elucidate and promote principles for conservation action in human-impacted landscapes of Mesoamerica and to enhance the contribution to biodiversity conservation of extant agriculture, post-agricultural regenerating forests, and forest restoration projects.

The synthesis will draw from existing or previous research in eight Mesoamerican countries. The internationally based effort will provide scientific information critical to the development of the Mesoamerican Biological Corridor and to biodiversity conservation programs throughout Mesoamerica.

The first meeting in May 2005 focused on biodiversity conservation in relation to agricultural activities and to Mayan culture and land use. The second meeting in November 2005 focused on biodiversity and conservation in forests regenerating following different land uses and in plantations designed to restore soil fertility and productivity on abandoned land.

A third meeting is planned for June 2006 and will focus on developing policy objectives for Mesoamerican government and non-government organizations concerned with biodiversity conservation in agricultural landscapes. To date, 27 scientists have participated, representing 7 countries (US, Mexico, Nicaragua, Costa Rica, Panama, Brazil, and the Netherlands). The group is now working on 10 jointly authored manuscripts.

# INTEGRATIVE GEOSCIENCES HOLDS INAUGURAL SYMPOSIUM

On October 8 the University's new Center for Integrative Geosciences held its inaugural symposium entitled "Dimensions in Geosciences," which highlighted the trans-disciplinary nature of emerging research in the geosciences. Hosted by Pieter Visscher, the Center's director and associate professor of marine sciences, the event drew an audience from a wide range of UCONN departments and beyond.

The keynote speaker was David Des Marais from NASA Ames Research Center, who discussed early life on Earth and the search for water and life on Mars in "Searching for biospheres in deep time and space."

Additional speakers included Kip Hodges from MIT who spoke on "Climate change and the Late Cenozoic evolution of the Himalaya and Tibet," Elfatih Eltahir from MIT discussed "Intransitivity in the climate of biosphere-atmosphere systems," and Collin Roesler of Bigelow Laboratories spoke on "Taking the pulse of our oceans: Investigating ocean ecology in the context of real time ocean observing systems using remote sensing and in situ buoy arrays."

Joan Bernhard of the Woods Hole Oceanographic Institute answered the question "Why study stinky mud? Studies of deep-sea laminated sediments provide insights into microbial communities and their effect on the geologic record," and EEB's own **Andrew Bush** spoke on "Filling in Darwin's blank pages: new analytic methods for overcoming incompleteness in the fossil record."

The speakers highlighted the range of methods used in modern earth sciences, and, importantly, the growing connections between the geological and biological sciences. It is hoped these connections will deepen at UCONN as the Center for Integrative Geosciences grows and matures.

The Center for Integrative Geosciences was created in 2005. It offers trans-disciplinary programs of instruction and research that advance understanding of the interaction of biological, chemical, geological, and physical processes as well as the processes that have shaped the Earth through geologic time, continue to shape the environment today, and which provide the basis for understanding the present and future impact of human activity on the planet. For more information about the Center for Integrative Geosciences (http://www.geosciences.uconn.edu) please contact Abi Howe at 860-486-4432 or abigail.howe@uconn.edu.

# RUBEGA AWARDED ALDO LEOPOLD LEADERSHIP FELLOWSHIP

**Margaret Rubega**

In 2005 EEB assistant professor **Margaret Rubega** was awarded a prestigious Aldo Leopold Leadership Fellowship, which trains academic environmental scientists to talk to the public about science in order to better inform policy debate. The training took place over two, one-week long sessions in June and September 2005.

Dr. Rubega, the Connecticut state ornithologist, often speaks to the public and the press about birds and the environment. Margaret indicated she, like many other scientists, felt uncomfortable explaining scientific issues in abbreviated "sound bite" language. "Especially when I was dealing with the media, I felt a little bit like I was on a train with no brakes."

The leadership fellowship training sessions provided the opportunity to learn skills that some scientists never acquire – how to communicate complex scientific issues with non-scientists in a clear, concise, and easily understood manner.

"The gulf between scientists and the average American is looking pretty wide," Rubega says. With issues such as intelligent design and global warming being debated, it's important for the public to better understand the basis for these debates she notes. "Most scientists read the papers and are amazed at how much the public doesn't understand about these things."

On the other hand, the public may not understand the difficulty scientists have avoiding jargon that articulates their explanations more precisely, or in qualifying their statements with disclaimers about the limits of what they know. To the general public, the disclaimers often confuse rather than clarify their statements.

For example, a simple question such as "Do birds know how to get to South America without landmarks?" could prompt a lengthy technical explanation outlining a long list of what is known and not known. Or, it could be answered correctly and more simply saying "Some do it by following other birds or following the stars."

Rubega states, "It's the qualifications that are problematic, yet it's painful for scientists not to do that. You get trained that way. The uncertainty in our data is as important as the things we know." Since World War II science has become more specialized and controlled by tight professional circles she notes. Training to be a scientist is, "in many ways a monk-like experience," including a long period of training and talking with similarly trained colleagues.

In one session with national science reporters, Dr. Rubega learned to boil down her answers to reporters. To demonstrate how this is done, a session leader summarized the Lord of the Rings trilogy to five words: "Small people defeat great evil."

Science reporters and editors from The New York Times, Associated Press, and National Public Radio conducted mock interviews with the fellows on controversial topics. Videotaping and critiquing their answers helped point out those areas in which improvement was needed.

"I was truly shocked at how little background in science most reporters who report on science have," Rubega says. "They have to produce a story in three hours and they don't have time to do extensive background research."

Lawmakers, the fellows were told, are primarily interested in practical answers. Giving testimony at mock hearings was practiced at sessions conducted by U.S. Senate Science Committee staffers and fellows learned to expect that "senators" might take phone calls, talk to staff members or get up and leave during testimony.

The training gave Rubega confidence in speaking with the press and public as well as a commitment to share what she learned. In the Fall 2005 semester she taught a seminar for biology graduate students on writing for the non-scientific audience. As part of the class, her students wrote op-ed articles about scientific policy issues.

"I certainly agree wholeheartedly with the mission of the Leopold Program – to get scientists in the position where they can communicate with non-scientists about what they know," she says.

*Adapated from an article by*
*Cindy Weiss, UCONN Advance*

# CURRENT FACULTY

Paul Lewis

**Paul Lewis** is on sabbatical leave for the academic year 2005-2006 (Fall and Spring). He is spending the Spring 2006 semester at the National Evolutionary Synthesis Center (NESCent ), located near Duke University in Durham, North Carolina (http://www.nescent.org/).

During his sabbatical, Paul is writing software for phylogenetic analysis in collaboration with Mark T. Holder (a UCONN EEB postdoctoral researcher with Paul from 2001-2003) and David L. Swofford (Florida State University). This software (named PHYCAS) is designed to be the computational engine behind much of what the CIPRES software does when completed. CIPRES stands for "Cyberinfrastructure for Phylogenetic Research" and is the name of an NSF-sponsored Information Technology Research grant, an $11.6M effort, comprising computer scientists and biologists from more than a dozen academic institutions. CIPRES is hosted by the San Diego Supercomputer Center.

The CIPRES software is being designed to estimate phylogenies on a scale large enough to accommodate data currently being generated by numerous ATOL ("Assembling the Tree of Life", http://atol.sdsc.edu/) projects. Scaling up phylogenetic analyses from hundreds to hundreds of thousands of taxa is an enormous challenge, but the importance of accurate phylogenies to many areas of biology and medicine makes the effort worthwhile.

Elizabeth Jockusch

A recent grant from NSF allowed **Elizabeth Jockusch** to spend spring break looking for slender salamanders (genus *Batrachoseps*) and exploring the Gold Country of the Sierra Nevada foothills. This project is designed to quantify the role of hybridization in generating morphological diversity in this speciose group of salamanders, and will support a graduate student, **Tobias Landberg**, who will characterize morphological diversity in the group, and a new postdoc, **David Angelini**, who will use molecular techniques to identify lineages of hybrid origin and regions of current hybridization. **David** received an NIH NRSA postdoctoral fellowship to investigate the developmental basis of divergence in antennal morphology in flour beetles of the genus *Tribolium*. This project has also garnered support through a recently-awarded seed grant from the USDA Functional Genomics of Arthropods and Nematodes Panel. Since arriving, Dave has developed a taste for molecular phylogenetics, and has initiated a side project on relationships among the major groups of *Tribolium*.

Carl Schaefer

In summer 2005 **Carl Schaefer** was in Brazil for both personal and professional activities. He first visited Londrina for a wedding and went on to Rio de Janeiro where he visited scientists at the Oswaldo Cruz Institute, and arranged for the publication of a paper, "Why are the subfamily relationships of *Triatominae* important?" in the journal Entomologia y Vectores.

Carl was also asked to join the journal's editorial board; unfortunately, within 6 months funding for the journal ended. Carl also discussed research on *Triatominae* (the vector of Chagas disease) with Cleber Galvão and José Jurberg, of the Institute.

A new species of heteropteran insect, *Pseudozirta schaeferi*, was described in 2005 (by Bérenger & Gil-Santana, Bull. Soc. Entomol. France).

"Biology, Ecology, and Evolution of Gall-Inducing Arthropods" (2 vol., 800 p.,) was published in 2005. Editors: A. Raman, C. W. Schaefer, and T.M. Withers. Dr. Schaefer wrote the chapter on Heteroptera, and co-wrote the introduction, "Galls and gall-inducing arthropods: an overview of their biology, ecology, and evolution" (Raman, Schaefer, and Withers) as well as the concluding chapter, "Galls and gall-inducing arthropods: ecological issues and evolutionary problems" (Schaefer, Raman, and Withers).

Additional papers recently published by Dr. Schaefer include: Lis, J.A. & C.W. Schaefer 2005. "Tibial combs in Cydnidae (*Hemiptera: Heteroptera*) and their functional, taxonomic and phylogenetic significance." J. Zool. Syst. Evol. Research 43: 277-283; Galvão, C., F.M. McAloon, D.S. Rocha, C.W. Schaefer, J. Patterson, & J. Jurberg. 2005. "Description of eggs and nymphs of *Linshcosteus karupus (Hemiptera: Reduviidae: Triatominae)*." Ann. Entomol. Soc. Amer. 98: 861-872; Panzzi, A.R., C.W. Schaefer, & E. Hirose 2005. "Biology and descriptions of nymphal and adult Jadera choprai (*Hemiptera: Rhopalidae*)." Ann. Entomol. Soc. Amer. 98: 515-526.

On April 8, 2006, Carl Schaefer testified as president of the UCONN AAUP Chapter before the Commission on Higher Education of the National Association of State Legislators in Washington, D.C. He pointed out that state support of higher education is falling, just as expenses (health, fuel, administrative costs) are rising. He also noted that the costs of faculty are not a major part of the increase, and that the gap too often must be covered by tuition.

# JANINE CAIRA NAMED BOARD OF TRUSTEES DISTINGUISHED PROFESSOR

**Janine Caira**

In January 2006 **Janine Caira** was named a Board of Trustees Distinguished Professor.

The award honors faculty who have achieved exceptional distinction in scholarship, teaching and service. The designation, which is reserved for no more than five percent of the total full professors in active service at UCONN was recommended by a selection committee and endorsed unanimously by the Board of Trustees at their January 31, 2006 meeting.

Dr. Caira, also a 2003 UCONN Alumni Association Distinguished Professor, is an internationally recognized authority on the evolutionary relationships of animal parasites, particularly the tapeworm parasites of sharks, skates, and rays.

Caira and her students have described 82 new species and 13 new genera of tapeworms as a result of her expeditions to California, Colombia, Madagascar, Thailand, Japan, northern Australia, Senegal, Papua New Guinea, Brazil, Malaysian Borneo, and the Caribbean.

She was awarded the Henry Baldwin Ward Medal of the American Society of Parasitologists in 1998; and in 2004 she was presented the University of Nebraska Alumni Achievement Award.

Thirty-one undergraduates have pursued independent research projects in Dr. Caira's laboratory; 19 of these students co-authored papers published in major national or international journals. Dr. Caira was presented with UCONN Alumni Association's Distinguished Teaching Award in 1999.

*Adapted from an article*
*by Kara A. Grava, UCONN Advance*

## 2005 & 2006 FACULTY GRANTS

Four EEB faculty were awarded UCONN Research Foundation "Large Faculty Grants" in 2005 and early 2006.

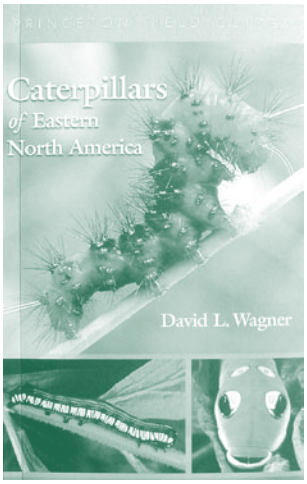
**Jean Crespi** – "An Evaluation of Commonly Used Stain Techniques with Implications for Convergent Margin Tectonics and Geometeric Morphometrics"

**Andrew Bush** – "The Late Devonian Mass Extinction in New York and Pennsylvania"

**Bernard Goffinet** – "Providing a Phylogenetic and Ontogentic Framework for Functional Genomic Studies in the Model Species *Physcomitrella patens*"

**Kent Holsinger** – "Evolutionary Radiations in Proteas of the Cape Floristic Region (South Africa)"

EEB Associate Professor **David Wagner's** new book, "*Caterpillars of Eastern North America: A Guide to Identification and Natural History*," with Princeton University Press treats nearly 700 species of common, economically significant, beautiful, or otherwise apt-to-be-asked-about caterpillars. The book is lavishly illustrated with more than 1000 color photographs and line drawings. The book is receiving attention from curators, forest managers, and an array of professional and amateur entomologists as well as gardeners and nature centers. It is also enjoying the attention of educators and libraries, in no small part because it includes a section on school projects targeted to a broad spectrum of students. These diverse audiences have helped drive sales of the book, which is already in its third printing since its July 2005 release.




The book represents the culmination of several years of support from the US Forest Service as well as Wagner's involvement in the All Taxa Biodiversity Survey currently underway in Great Smoky Mountains National Park. The book can be obtained from Amazon.com or directly from the author.

# NEW FACULTY

Photo by Melissa Arbo

In January 2006 **Dr. Michael "Mike" Willig** assumed the position of Director of the Center for Environmental Science and Engineering (CESE) and joined the EEB faculty.

Before coming to UCONN, Mike served the National Science Foundation in two capacities: Director of the Division of Environmental Biology from 2004 to 2006 and Program Director for Ecological Biology from 2000 to 2002. He was also a Professor of Biological Sciences at Texas Tech University. His long and distinguished career in environmental issues has been supported by grants from the NSF, USDA, EPA, DoD and NIH, for a total of more than $17 million over his career.

Mike's research is multidisciplinary and characterized by quantitative approaches to ecological, biogeographic, and systematic questions based on manipulative and observational experiments, or modeling exercises. Currently, his research program has a number of foci: (1) macroecology, (2) community ecology, (3) disturbance ecology, (4) behavioral ecology, (5) conservation biology, and (6) phylogenetic constraints on sexual dimorphism. In addition, much of his research is focused in the tropics and assumes a long-term and geographically explicit perspective.

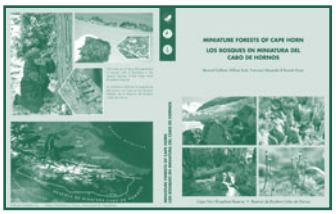
As Director of CESE, Mike is charged with initiating a new Center that focuses on interdisciplinary research, education and outreach in environmental science, engineering, policy and sustainability. His vision and aspirations for the Center are broad and inclusive of the many disciplines involved in scientific environmental research.

# 70-POUND FROG TAKES UP RESIDENCE AT UCONN!

Pheeby, as she is affectionately known, is not the product of nature gone awry. She's one of the 15 painted frogs that were part of last summer's 2005 Willimantic Frogfest. She was painted by Sally Sargent Markey of Granby, CT.

On Tuesday, April 4, 2006 Pheeby made her official debut at a "frog-warming" party in her honor. She was purchased with contributions from faculty, staff and students from the Departments of Ecology & Evolutionary Biology, Physiology and Neurobiology, and the School of Pharmacy and named through a naming contest. She will reside atop her 1000-pound granite base in the lobby of the Pharmacy/Biology Building.

**Chris Martine**, an EEB graduate student, had the winning entry. Pheeby's name recognizes the contributing departments of EEB, Physiology and Neurobiology, as well as the School of Pharmacy. There were many creative entries and picking the perfect name was a tough decision for the Naming Committee. EEB's **Kent Wells**, who is about to publish a book on frog behavior, served as the Committee's Chair.



The "*Miniature Forests of Cape Horn*" is the new book written by EEB Associate Professor **Bernard Goffinet**, in collaboration with Drs. William Buck, Fransisca Massardo, and Ricardo Rozzi, a former EEB graduate.

The book, which is published through the University of Magallanes, draws the naturalists' attention to the mosses, liverworts, hornworts and lichens that compose much of the botanical diversity within the *Nothofagus* forests of Southern Patagonia.

Introductions to biodiversity of the archipelago, the threats it faces and the biological characteristic of bryophytes and lichens, lead to a series of portraits of common or characteristic species. These aim at raising the awareness of visitors to the Ethnobotanical Park OMORA of the diversity and ecological significance of bryophytes and lichen-forming fungi.

Short essays focus less on the diagnostic features of the species than on the biology and ecological significance of these organisms and their contribution to the overall biodiversity of the region. Discussions ranging from long-distance dispersal and efficiency of sexual reproduction to bryophytes and lichens controlling nutrient flow and hosting a vast array of parasites provide a diversity of entry points to the fascinating world of these botanical Lilliputians. The many color photographs of the species and the landscape they inhabit should entice any tourist to come to Patagonia armed with a hand-lens.

# UCONN IN SOUTH AFRICA

**John Silander** (EEB faculty) and **Rachel Prunier** (EEB graduate student) staffed the first UCONN Honors in Cape Town Program in the Spring 2006 semester. The students came from a variety of backgrounds and have diverse majors including political science, psychology, urban studies and molecular and cell biology. The Program was created by Ross Lewin, director of Study Abroad and Lynne Goodstein, associate vice provost of the Honors Program and offers hands-on experience and traditional course work.

Rachel at Haut Bay on the Cape Peninsula

The 12 students took two classes, one on the politics of South Africa, the other on the natural history and ecology of the Cape Region, as well as a research seminar which was taught by professor John Silander and integrated classroom and field work focusing on topics including climate, geology, bio-cultural diversity, and conservation. The students took an intensive nine-day field trip through the Eastern and Western Cape Provinces.

Students listening to a lecture on the importance of parks addressing the needs of local residents at Edith Stephens Wetland Park, which is located in a historically disadvantaged area of Cape Town

The heart of the program, however, was an internship three days a week at one of a number of non-governmental organizations that addresses issues of social justice. These ranged from Christel House, a school for disadvantaged children, to Cape Flats Nature, an environmental conservation organization that works in the black townships.


Rachel with students in Cape Town.

During breaks from their teaching schedules, John and Rachel had the opportunity to work on their own research. Rachel, a graduate student working with Kent Holsinger, is studying the patterns and processes of speciation in a group of South African Proteas. She will be using the DNA that she collected and results from the common garden that she established to test the hypothesis that natural selection is driving speciation in the White Proteas.

Dinner at Wilderness National Park

John is working on a collaborative project with several PI's from the US and South Africa which is developing dynamic models of *Protea* species in both space and time, and investigating how the plants in these models respond to climate change. This will test their ability to downscale climate models. The group has good climatological data from the last 50 years, but they want to extend their dataset back in time to see what the distribution patterns of certain Proteas were before the current round of climate change.

# NEW INSIGHTS ON BIODIVERSITY IN SOUTH AFRICA

The research of EEB professor **John Silander** and his doctoral student, **Andrew Latimer**, highlights the exceptional plant diversity of an African biodiversity hot spot.

They contend the scenic hills of the Cape Floristic Region of South Africa contain as much plant diversity as many tropical rain forests. The patterns of diversity in this South African region differ fundamentally from the diversity patterns of the Amazon, however.

Their findings were published in the September 9, 2005 issue of the journal *Science*.

The Cape Floristic Region, located at the southern tip of the African continent, is designated as a biodiversity "hot spot" and UNESCO World Heritage site. Roughly the size of Maine, it contains approximately 9,000 different plant species in total and has one of the highest densities of plant species in the world.

The researchers contend that some biodiversity "hot spots" may require their own specially tailored conservation strategies as they may be more vulnerable to the effects of climate change and global warming.

Latimer, the article's lead author says, "When people think of the world's biodiversity 'hot spots,' or areas with extremely high concentrations of different species, they tend to picture tropical rain forests like the Amazon. Our study shows the Cape Floristic Region of South Africa as a whole may have diversity comparable to a similarly-sized piece of the Amazon but an ecological tour through that region would look completely different."

In the Amazon Latimer says, "there are a staggering number of different tree species in close proximity to each other but a number of those species keep reappearing" throughout the region.

However, in the Mediterranean-climate shrublands of the Cape Floristic Region, known as fynbos, there is a set of very distinctive subregions nestled together. "Those distinctive, localized areas, which are typically separated from each other by drier lowland areas, each contain an almost unique set of plants. Plants found in one area in abundance may be scarce or not present at all in the next area" says Latimer.

Latimer and Silander attribute the different diversity patterns in the Cape Floristic region to seed dispersal rates that are about 100 times lower than in the Amazon. Many plant seeds are carried by ants which don't travel more than a few meters. In the Amazon, birds and large mammals often disperse seeds more than a kilometer. Of note was that the rate at which new species emerge in this South African region appears to be higher than in tropical rain forests.

"This study is significant because it shows that the plants unique to this South African region are extremely isolated and, as such, are exceptionally vulnerable to climate changes and the effects of global warming," says Silander who has conducted research in the Cape Floristic Region since 1999.

Dr. Silander received an $850,000 NSF-Ecological Biology Panel grant in 2005 (EEB Newsletter 2005; Number 11), a three-year collaborative grant combining the expertise of colleagues at Duke, the University of Cape Town, and the South African National Biodiversity Institute, to develop a statistical model to predict the effects of climate change on the region's unique plants, many of which are threatened with extinction.

"Our findings underscore the need for targeted, specialized conservation strategies for the world's various biodiversity hot spots," says Silander. "For instance, the Cape Floristic Region may be better served by more, smaller reserves than by fewer, larger protected areas that are well suited to the Amazon."

*Adapted from an article by Beth Krane, UCONN Advance*

In August 2005 Dave Wagner's grad student, **Jadranka Rota**, presented her work at the Annual Meeting of the Lepidopterists' Society in Sierra Vista, AZ. Jadranka also presented a talk at the Entomological Society of America's Annual Meeting in December 2005 in Fort Lauderdale, FL.

Earlier this year, she was awarded a Doctoral Dissertation Improvement Grant from the NSF with which she will be able to carry out the remaining sequencing and scanning electron microscopy work for her dissertation on the systematics of choreutids.

In Fall 2005, Jadranka traveled to Costa Rica to continue her field work on the behavior of metalmark moths (*Lepidoptera: Choreutidae*) with the grant she received from the Center for Conservation and Biodiversity; and in May 2006, with the money from an Ernst Mayr Travel Grant from the Museum of Comparative Zoology at Harvard, she will go to London to work on the choreutid type collection in the Natural History Museum.

# GRADUATE STUDENT HIGHLIGHTS

**Jessica Budke**, a graduate student working with Bernard Goffinet and Cynthia Jones, completed her master's thesis in December 2005. Jessica's thesis entailed molecular phylogenetic analyses of the Timmiaceae and a developmental study of the moss *Timmia megapolitana*. In July 2005 Jessica guided an educational outreach program at the James T. Goodwin Conservation Center in Hampton, CT. The program led members of the community on an exploration of local moss diversity. In August 2005 Jessica presented results from her master's thesis research in Austin, TX at the Botanical Society of America's Annual Meeting. She is currently undertaking research on moss sporophyte development as a Ph.D. student in EEB.

**Chris Martine,** a graduate working with Greg Anderson, recently gave research seminars at Central Connecticut State University and Western Connecticut State University on the evolution of separated sexes in Australian eggplant relatives, and will be presenting similar talks this summer at the Solanaceae 2006 Conference in Madison, Wisconsin, and Botany 2006 in Chico, California. He spent most of the spring semester writing his dissertation, the first chapter of which will appear in *Systematic Botany* (co-authored by EEB's Dan Vanderpool, Greg Anderson and Don Les) this summer. A paper stemming from collaborative work with Dave Lubertazzi (recent Ph.D. in EEB) on an ant-dispersed endangered shrub was recently published, and two papers are in press in which new *Solanum* species are described from South America (with G. Anderson and collaborators) and Australia. Chris, who recently completed his Ph.D., has accepted a tenure track position as Assistant Professor of Plant Biology at Plattsburgh State University (SUNY). He will teach Field Botany plus a course on communicating in science in the fall 2006.

**Maxi Polihronakis**, a 4th year Ph.D. student working with Charlie Henry, is studying the evolution of male and female genitalia in a group of scarab beetles in the genus *Phyllophaga*. Her work includes developing a phylogeny of the *fraterna* species-complex within the genus *Phyllophaga*, comprising approximately 25 species of June beetles from the eastern half of the United States. Maxi is interested in using the phylogeny to test hypotheses of genitalic evolution of both male and female genitalic characters. In addition, Maxi is performing fertilization success analyses to determine whether intra-specific variation of male and female genitalic shapes is correlated with paternity success. These two aspects of her project will allow her to determine whether evolutionary processes occurring among species are concordant with the evolutionary processes occurring within species. Maxi will complete her third field season this May in the southeastern portion of the United States, and has recently published a paper on the intra-specific variation of genitalic shapes in *Phyllophaga hirticula* in the Annals of the Entomological Society of America. Funding for Maxi's work is provided by Sigma Xi, The American Museum of Natural History, The Society of Systematic Biologists, and the Russell and Betty DeCoursey, James A. Slater, and Lawrence R. Penner Funds.

**Michael McAloon**, graduate student of Dave Wagner and Carl Schaefer, was awarded a National Science Foundation East Asia & Pacific Summer Institute Fellowship to continue his research on the phylogeny of chigger mites in the genus *Leptotrombidium*. Several species of mites in this genus transmit scrub typhus, a potentially fatal disease. This grant, along with an EEB Departmental grant, enabled Michael to spend eight weeks in China conducting field work and examining types described by Tinghuan Wen over his 50+ years in acarology. Michael was able to study mites that had not been previously examined by any researchers outside of China. He digitally imaged 66 of Wen's type specimens with the ultimate goal of saving the images and related specimen data in web-accessible form so that other mite researchers can also utilize these data. He presented results from his research in China at the Acarological/Entomological Society of America's joint meeting in Ft. Lauderdale, Florida in December 2005. Michael also received an Ernst Mayr Award from Harvard University to work with the recently acquired chigger collection at the Smithsonian Institution.

Nanci Ross

**Nanci Ross**, a Ph.D. student in the Greg Anderson lab, won the Garden Club of America Award for Tropical Botany. The funds will be used to support Nanci's field research in Belize where she is investigating the effects of ancient Maya silviculture on the tree species composition in the extant forests of Northwestern Belize.

**Susan Z. Herrick**, a Ph.D. student working with Kent Wells, is currently undertaking a project that focuses on the influence that bullfrogs have on the social behavior of green frogs. In 2005 Susan was awarded a Ralph Wetzel Grant which helped purchase a tagging system normally used on fish to use with frogs. She indicated it has "worked well in the field" and preliminary data are still being analyzed. Susan expects to spend a busy summer testing for habitat choice in green frogs both with and without bullfrogs present. She plans to audio-record her pond-site 24 hours a day for the entire sea-

# GRADUATE STUDENT HIGHLIGHTS

son to discover the temporal patterns of the calling behavior of these species when they are together. Susan will also quantify the microhabitat choices as well as daily and seasonal movements within the pond.

photo by Daniel Buttrey, UCIMT

**Susan Letcher**

In 2005, **Susan Letcher**, a 3rd year Ph.D. student in Robin Chazdon's lab, spent six months in Costa Rica studying tropical rainforest regeneration. Her work focuses on the effects of lianas (woody vines) during forest succession. Tropical secondary forests are major players in the global carbon cycle and the maintenance of biodiversity in today's fragmented landscapes. The abundance of lianas in tropical forests is an important difference from temperate forests, yet much of our understanding of forest succession derives from studies in the temperate zone. Susan studies the abundance and diversity of lianas in secondary forests, and their effects on forest structure and composition. Her work has multiple implications for forest management, conservation and ecological theory. Susan's fieldwork in 2005 was supported by a UCONN Outstanding Scholar Fellowship, the Ronald Bamford Endowment, the Center for Conservation and Biodiversity, and the Organization for Tropical Studies. Currently, Susan is funded by an NSF Graduate Fellowship.

**Carrie Fyler**, a Ph.D. student in Janine Caira's lab, continues her research on the ecology and evolution of the tapeworm genus *Acanthobothrium*. In January 2005 Carrie traveled to Senegal, Africa and participated in her second collecting trip with the Caira lab. In July 2005 Carrie traveled to The Czech Republic to take part in the 5th International Workshop on Cestode Systematics and Phylogeny and present her research on tapeworm ultrastructure (presently in review for publication). Carrie's Masters project, completed at San Diego State University, was published in July 2005 (*Journal of Biogeography*). In January 2006 Carrie spent 10 days at the Natural History Museum in London working with colleagues on the Global Cestode Database (www.tapeworms.org). Carrie's first cestode paper, co-written with advisor Janine Caira, was published in February 2006 (*Journal of Parasitology*). Currently, Carrie is working on investigating functional morphology of scolex morphotypes of *Acanthobothrium*, which will be presented at the International Congress of Parasitologists this summer in Scotland.

A significant amount of forest throughout the tropical regions is undergoing selective logging and low impact management. From the Fall of 2004 to the Fall 2005, **J. Pablo Arroyo**, a 4th year student in Robin Chazdon's lab, has been developing his research in Costa Rica (northern lowland wet forest), assessing whether tropical forest management plan information can be used to evaluate tree diversity both regionally and locally. Pablo's study also is developing digital tools that can be used by foresters in the field to improve tree identification. Great interest has been shown by the Ministry of the Environment and Energy of Costa Rica (MINAE) and NGOs such as OTS and the Foundation for the Development of the Central Volcanic Cordillera (FUNDECOR). Pablo's fieldwork is being supported by the Organization for Tropical Studies, the World Wildlife Fund and the National Science Foundation. In Costa Rica, MINAE and FUNDECOR have been collaborating with this study and a regional workshop is planned for the spring of 2007 where professionals, farmers and decisions makers will be invited to discuss the future of forest management in the region based on this study's findings.

In December 2005 Dr. Jockusch's first graduate student, **Jonathan Richmond**, defended his dissertation which focused on parallel speciation in skinks. Jonathan is now a postdoc at Cornell in the lab of Kelly Zamudio, where he is investigating the relationship between immune system diversity and population declines in several species of frogs.

Graduate student **Brigid O'Donnell**, working with Elizabeth Jockusch, is investigating the developmental basis and evolutionary consequences of variation in gill morphology in mayflies; thanks to contributions of specimens from all over the world, her molecular phylogeny of leptophlebiid mayflies has been growing rapidly.

Graduate student **Roberta Engel**, working with Elizabeth Jockusch, is studying diversification of pseudoscorpions in two habitat island systems, granite outcrops of western Australia and high elevation forests of southeastern Arizona; she is looking forward to returning to Australia this summer to work with Mark Harvey at the Western Australia Museum.

EEB graduate students **Kristiina Hurme** and **Chuck Smith** spent the summer of 2005 managing a field station in southern Belize. While at the Belize Foundation for Research and Environmental Education (BFREE), Kristiina performed preliminary research on frog reproductive behavior for her dissertation work. She compared Belizean male *Hyla microcephala* calls with those recorded in Panama by her advisor, Kentwood Wells. Chuck assisted her in the field and spent many hours writing his dissertation while swinging in a hammock.

In February and March of 2006, Kristiina attended an Organization for Tropical Studies Fundamentals of Tropical Biology graduate field course in Costa Rica. "The course was a wonderful experience" said Kristiina and allowed her to survey many potential study sites for her dissertation research. She received an OTS post-course grant to return to La Selva Biological Station in June 2006 to examine the reproductive behavior of *Hyla ebraccata* in the absence of interspecific acoustic interference from *Hyla microcephala*.

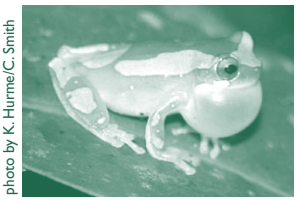


photo by K. Hurme/C. Smith

***H. ebraccata***

# EEB STAFF CHANGES

In January 2006 EEB welcomed **Dr. Matt Opel** to the full-time greenhouse staff. Matt is an EEB graduate who received his Ph.D. in May, 2004. Matt joins Clint Morse and Sandy Ek in caring for the living plant collections. "Having a third full-time staff member is critically important as we look toward the future and the eventual replacement of the Torrey Life Sciences building, the redesign of our existing greenhouses, and in caring for collections during the transition." said EEB Acting Head Kent Holsinger.

In February 2006 **Andrew Doran** EEB's Collection Manager left his position to assume the position of Administrative Curator of the University and Jepson Herbaria at the University of California Berkeley. Andrew is nearly settled in his new position and enjoys his daily walks to the Berkeley campus from his Emeryville home. Andrew can be reached at his Berkeley office at andrewdoran@berkeley.edu. We have begun a national search and hope to have a new collections manager in place by the start of the fall semester.

# UNDERGRADS PRESENT THEIR RESEARCH

Many undergraduates at UCONN are currently engaged in research programs under the thoughtful guidance of faculty mentors. However, it is seldom that undergrads are given the opportunity to present their work in a public manner.

To address this, the University of Connecticut Honors Program has sponsored "Frontiers in Undergraduate Research," for the past nine years. This exhibition allows undergraduates engaged in research from a variety of disciplines to present their work publicly. Five EEB research undergraduates displayed their posters in the 2006 Frontiers in Undergraduate Research Poster Session held April 8-9, 2006 in the Wilber Cross Building on the University's Storrs campus.

"Testing the lichen-guild hypothesis in a southern Patagonian forest"
Jessica Clopton, Ecology & Evolutionary Biology
Bernard Goffinet, Advisor, Ecology & Evolutionary Biology
*College of Liberal Arts and Sciences*

"Structure of the pseudobranch in fishes of the Family Poeciliidae"
Stephen Struble, Ecology & Evolutionary Biology
Eric Shultz and Kurt Schwenk, Advisors, Ecology & Evolutionary Biology
*College of Liberal Arts and Sciences*

"Prey-processing in Bee-eaters (*Merops*)"
Kira Sullivan-Wiley, Ecology & Evolutionary Biology
Margaret Rubega, Advisor, Ecology & Evolutionary Biology
*College of Liberal Arts and Sciences*

"Lack of preference for kin in colonies of the termite *Nasutitermes corniger*"
Greg Teschendorf, Ecology & Evolutionary Biology
Eldridge Adams and Lynn Atkinson, Advisors, Ecology & Evolutionary Biology
*College of Liberal Arts and Sciences*

"Larval morphology and behavioral characters suggested as sources of phylogenetic information on Megachilid Bees"
Cassandra Daley, Ecology and Evolutionary Biology
Dave Wagner, Advisor, Ecology & Evolutionary Biology
*College of Liberal Arts and Sciences*

# ECOLOGY & EVOLUTIONARY BIOLOGY 15TH ANNUAL GRADUATE STUDENT SYMPOSIUM

The 15th Annual Graduate Student Symposium was held on Saturday, March 18, 2006. This all-day symposium provides graduate students an opportunity to present their research and to get feedback from fellow grads, prospective students, and faculty.

This year's symposium was a great success thanks to all who participated, organized and attended the event. CLAS Dean Ross MacKinnon gave the opening address which was followed by 19 talks given by EEB graduate students at various stages of their careers.

This year's talks showcased the diversity of the EEB department – ranging from mosses to fish, tapeworms to birds, beetles to invasive plants, species-specific to community level studies – and also the many geographical localities where our graduates do their work, including Costa Rica, Panama, Australia, Senegal, and the west coast, southwest and northeastern US.

Attendees were entertained over lunch by the UCONN Taiko Traditional Japanese Drumming group, featuring EEB's very own Uzay Sezen. The Graduate Student Senate generously funded two session breaks and lunch. To read titles and abstracts from the presenters, please visit: http://hydrodictyon.eeb.uconn.edu/department/grads/GradSymposia/2006/.

# FOUR EEB STUDENTS INDUCTED INTO PHI BETA KAPPA

Congratulations to the four undergraduate students working in Ecology and Evolutionary Biology who have been invited to join Phi Beta Kappa. Phi Beta Kappa is the oldest (founded in 1776) and most prestigious academic honor society that recognizes scholarly achievement, good character, and broad cultural interests of students in the Liberal Arts and Sciences.

**Michael Cordiero** is an Honors student majoring in Biological Sciences. He has been working with Chris Simon throughout his time at UCONN and has received four REU fellowships (January 2003, Summers 2003, 2004, 2005). Some of his research formed an important part of a recently accepted paper in *Systematic Biology*. Michael plans to attend medical school and obtain an MD in psychiatry.

**Adam Leston** has been doing research in EEB for two years, including a summer research fellowship last year. He has worked with Chris Simon on the phylogenetic relationships among three New Zealand cicada species in the genus *Rhodopsalta*. After graduation, Adam plans to pursue his interest in hiking and the outdoors by spending the summer on the Appalachian Trail.

**Hillary O'Donnell** is an Honors student majoring in Biological Sciences. She studied abroad during her fall semester of her junior year in Australia where she learned about the local flora and fauna. She worked in John Silander's lab for her honors research project. She presented this work at the annual Undergraduate Biology Research Colloquium in April. The title of her talk was "Effects of an invasive plant species, *Celastrus orbiculatus*, on soil composition and processes."

**Jessica Watson**, a New England Scholar, has gained a variety of entomological experience working in Dave Wagner's lab collecting insects and insect data. In addition, she has spent a summer surveying insect diversity along CT power-line corridors in conjunction with a study on birds, bees and butterflies. Jessica has also completed independent studies in the UCONN biological collections during which time she learned about curation and worked on Coleoptera identifications. Currently she is gathering data on rare invertebrates. Jessica is still unsure if she wants to focus on research or teaching as a career. Upon her graduation next spring she is thinking of applying to a program to teach high school biology in New York City. An avid music lover, she plays drums and guitar in her free time.

# UNDERGRADUATE STUDENT HIGHLIGHTS

EEB sophomore **Steven Hovorka** is currently participating in an independent study with Eric Schultz investigating the reproductive capabilities of Blacknose Dace, *Rhinichthys atratulus*. Steven will be joining the 2007 Expedition to Honduras through Operation Wallacea. Operation Wallacea is an international organization coordinating conservation efforts in five separate countries. It not only looks to volunteers for help, but also educates the local communities on how to best conserve the amazing resource around them. In Honduras, Steven will help assess the diversity of organisms that live in the tropical forest, and may help researchers learn more about the activities of Howler Monkeys in the wild! If you would like more information about the OpWall program, or Steven's own expedition, you can visit www.opwall.com, or email him at steven.hovorka@uconn.edu.

EEB senior **Chris Field** received a People's Bank Community Internship Award to participate in an internship with Audubon Connecticut. Chris will be developing an Important Bird Area Conservation Plan for Lighthouse Point Park in New Haven. Lighthouse Point is an important stopover site for migratory birds, and is well known for the thousands of hawks that pass over the park every fall. The conservation plan will identify the natural resources of the park and suggest management solutions to preserve the park as an important area for birds.

**Kathryn Gannon** finished her senior thesis in the fall. Her thesis includes chapters on DNA methods, hybridization and reproductive biology of periodical cicadas, results of her hybridization studies, and results of her paternal leakage study. She is writing up the latter two chapters as publications. She accomplished this research while pursuing a successful degree in biomedical engineering. Between undergrad and grad school she will spend a semester in Chris Simon's laboratory sequencing New Zealand cicadas for a NZ government supported research project.

**Kashiwa Hereford** is finishing her senior project this spring in Chris Simon's lab. She is studying hatching success in hybrid versus homospecific crosses of periodical cicadas. Hundreds of experimental nests were clipped (following the 2003-2004 hatching season) and stored in the laboratory. From these, Kashiwa chose a subset with equal numbers of nests for each type of cross. By dissecting nests, she has been quantifying the number of hatched versus aborted eggs in each type of mating. She and Kathryn Gannon will compare results to reach a synthetic conclusion on the fitness effects of hybridization in *Magicicada*.

EEB senior **Greg Staley** is completing his senior project this summer with the assistance of an NSF Research Experience for Undergrads grant from the National Science Foundation. Part of this work will be done in Chris Simon's lab at the University of Connecticut and part at the University of Siena, Siena, Italy, where he will be sequencing complete mitochondrial genomes of periodical cicadas. Greg plans to become a high school teacher.

Unlike most insectivorous birds, bee-eaters count on venomous or stinging bees of some sort for a large portion of their diet. Viewing these birds on more than a dozen occasions at the Bronx Zoo, undergraduate **Kira Sullivan Wiley**, under the guidance of both Drs. Margaret Rubega and Chris Elphick, used a high-speed video recording system to get footage of bee-eaters consuming various types of prey at 500 frames per second to determine exactly what a bee-eater does to get past the defenses of its heavily guarded food.

Bee-eaters are able to distinguish between the stinging and non-stinging types of prey and respond accordingly. In addition, different species of bee-eaters process prey differently. The differential use of a behavior Kira termed "head-rolling" in which the bird, in the process of striking its prey against a perch, rotates its head around so that the head ends up virtually upside down in relation to the ground. This head-rolling behavior is as yet undescribed in the literature.

Kira is conducting her research as a part of her Honors Program thesis as well as her University Scholar project. Most of the analyses for the latter part of the project were accomplished in the summer of 2005 with the financial assistance of a SURF grant.

This is her third year conducting research in the ornithology laboratory. Kira graduates in May.

# ASSOCIATES AND FORMER STUDENTS

Lori Hosaka LaPlante

In September **Lori Hosaka LaPlante (**Ph.D. 2005) successfully defended her dissertation entitled: "The reproductive ecology of two wrasses: a focus on reproductive variation in females."

Lori worked as a teaching assistant last summer for the Diversity of Fishes course offered at the Shoals Marine Laboratory (SML) on Appledore Island off the coast of Maine.This summer, Lori will return to SML as a faculty advisor to one or two undergraduate fellows participating in the Research Experience for Undergraduates program.

Dr. LaPlante is now an Assistant Professor in the Biology Department at Saint Anselm College in Manchester, NH.

Patrick Owen

**Patrick Owen, (**Ph.D. 2003) has accepted a tenure-track position at Ohio State University at Lima. Dr. Owen will also have an affiliation with the Evolution, Ecology and Organismal Biology Department in Columbus, OH. Patrick studied with Dr. Kent Wells to complete his degree.

Derek Sikes

**Derek Sikes** (Ph.D. 2003) spent the last three years working as an Assistant Professor at the University of Calgary where he taught "Introduction to Invertebrate Zoology" and "An Introduction to Biosystematics," a course which he developed and one based on his experiences in EEB with Drs. David Wagner, Chris Simon, and Paul Lewis (among many, many others).

Photos by another EEB alum, **Piotr Naskrecki**, (Ph.D. 2000) Director of the Invertebrate Diversity Initiative at Conservation International, made appearances in Derek's lectures (which were in part based on his notes taken from Janine Caira's EEB invertebrate course).

With grant money obtained from NSERC (Canada's NSF) Derek was able to continue his work on beetle evolution which included expeditions to the Solomon Islands, Bali, Flores, Sichuan China, and Queensland Australia.

In June 2006 Derek will be moving to Fairbanks, Alaska to take a position as Professor of Entomology/ Curator of Insects at the University of Alaska.

Tami Bogéa

**Tami Bogéa** (Ph.D. 1999) is currently the Head of the Laboratory of Animal Parasitology at Estácio de Sá University in Rio de Janeiro, Brazil. While at UCONN, she studied with Dr. Janine Caira.

Dr. Bogéa's research focuses on the biology of exotic mollusks (with emphasis on host-parasite relations) and neurobiology of larval trematodes. Dr. Bogéa teaches undergraduate courses in parasitology and evolution as well as a graduate course in general parasitology.

Dr. Bogéa and her husband, Renato, live in Rio de Janiero with their two daughters, Isabel and Sarah.

Stan Malcolm

**Stan Malcolm** (Ph.D. 1981) has been documenting a small section of the Air Line Trail in Hebron, Connecticut, for over four years. His web site (www.performance-vision.com/airline) offers in excess of 1,500 photos of the trail in all seasons. "In winter I tend to shoot broad landscapes and sunrises, while in warmer months my subjects are more intimate: close ups of insects, plants, and animals," says Stan.

Walking the same section of trail for so long has given him a dynamic sense of change over time - the almost daily changes in light, flora, and fauna – and nuances of animal behavior and interaction that are easily missed when one is not "out there" constantly. Stan says, "I've come to appreciate the details around us that so fascinated naturalists like J. Henri Fabre, Edwin Way Teale, or more recently Berndt Heinrich. Not bad for a boy raised in New York City."

Stan's work has received several awards and a feature write-up in The Hartford Courant (www.courant.com/features/lifestyle/hc-malcolmfeature.artjan23,0,6693195.story). His photography has been recognized by first place and People's Choice awards in the Connecticut Audubon Society's annual photo contests for 2005 and 2006.

# THE DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY GRATEFULLY ACKNOWLEDGES SUPPORT FROM THE FOLLOWING INDIVIDUALS

Dr. and Mrs. Robert A. Angus
Anonymous
Mr. Robert Behnke
Ms Anne S. Benninghoff
Mr. Gary W. Bigelow
Dr. Janine N. Caira
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Dr. and Mrs. David Wagner
Dr. and Mrs. Kentwood Wells

*This list represents contributions received on or before April 13, 2006.*

## ANONYMOUS GIFT CREATES AN ENDOWMENT FOR THE CENTER FOR CONSERVATION AND BIODIVERSITY

At the end of 2005 EEB's Center for Conservation and Biodiversity received a very generous gift from an anonymous donor.

The gift of $25,000 will be made over a 5-year period and establishes an endowment for "the purpose of providing financial support for the Center for Conservation and Biodiversity including an annual graduate student award."

"We are absolutely delighted to learn of this exceptional gift," says Dave Wagner, Co-Director of the Center, "not only will it bolster our ability to directly fund graduate student research, but also will enhance our efforts to secure additional contributions from other like-minded donors."

If you'd like to make a tax-deductible contribution to the Center's Endowment Fund, please make your check to The University of Connecticut, CCB Endowment Fund and mail to Pat Anderson, University of Connecticut, U-3043, Storrs, CT 06269. For additional questions, email Pat at pat.anderson@uconn.edu and to reach her by phone, please call 860-486-4323.

## WHERE DOES MY EEB CONTRIBUTION GO?

Our annual newsletter provides the opportunity to share with you the research activities and successes of our department, in particular, our outstanding graduate and undergraduate students. Because EEB is able to provide funding, we have been fortunate to attract some of the brightest students in the fields of ecology and evolutionary biology from around the world

Since 1999 the EEB Department, the Center for Conservation and Biodiversity and the Connecticut Museum of Natural History have funded $109,000 in student awards. The funding for these awards comes directly from your contributions. We are truly grateful to all of you who have contributed in the past.

Unfortunately even with this impressive history, every year requests for funding exceed available money. Our goal is to provide a research award to every EEB student who submits a qualified application. Your generous contribution today will help us say "yes" to more students in the coming year.

If you have made a contribution in the past, we thank you and ask that you please continue your support; if possible make a contribution at a higher level this year. If you have yet to make a contribution, we ask you to consider beginning a relationship of annual support with EEB.

Through your support EEB will continue to offer the very best teaching, research, and training programs; we will continue to attract the best and brightest students. Please join the growing numbers of EEB supporters who believe the future of the world in which we live is best served by knowledgeable, enthusiastic, and dedicated scientists and stewards. Make a contribution today, please.

If you would like to make a gift in the form of a pledge, please contact Pat Anderson, EEB Program Coordinator, at 860-486-4323 or pat.anderson@uconn.edu.

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