



May 2013

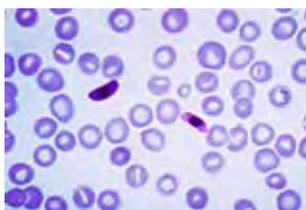
## Our grads rock: Museum of Zoology student awards date to early 1900s



Each year, the U-M Museum of Zoology uses its historical endowments, some of which date from the early 1900s, to support graduate student research projects through scholarship awards. Read about the stellar students selected this year.

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## Research feature: modeling parasite diversity may help eliminate malaria



Malaria is an infectious disease that is estimated to kill more than half a million people every year, mostly young children in Africa. It is spread by mosquitoes infected

with *Plasmodium* parasites that attack red blood cells in the human body. *Plasmodium falciparum*, the species that is responsible for most of these deaths, causes malaria by entering red blood cells and releasing antigens that travel to the surface of the cells, where they change the adhesion properties.

In a paper published online Dec. 18, 2012 in the journal *eLife*, a team led by postdoctoral fellow [Yael Artzy-Randrup](#) describes the development of a new computational model of this highly diverse and complex system.

Artzy-Randrup's co-authors include [Mary Rorick](#), postdoctoral fellow and their mentor, Professor [Mercedes Pascual](#).

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## Alumni profile: Ruiz directs Nicaragua Biodiversity Project, studying forest regeneration after hurricanes

**Javier Ruiz (Ph.D. EEB 2008)** is director of the



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## What's up in EEB

### EarlFest



A symposium was held May 18, 2013 in honor of Professor Earl Werner to celebrate his career and his influence on the field of ecology. An informal gathering followed at the E.S. George Reserve. Werner retires in December 2013.

[Read more »](#)

## You're invited: Ecological Society of America - Michigan Ecology Mixer in Minneapolis

EEB faculty, students, alumni, and guests are invited. 6:30 - 8:30 p.m., August 6, 2013 at The Local, 931 Nicollet Mall, Minneapolis, Minn.



Hosted by Deborah E. Goldberg, Elzada U. Clover Collegiate Professor and Chair, EEB; and host to be confirmed, SNRE. RSVP to [Heather Lutz](#).

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## Science fun fact

**Stressed-out tadpoles grow larger tails to escape predators!**

Biodiversity Project, Nicaragua, a research initiative conducting research in Eastern Nicaragua. Ruiz is collaborating with Professor [John Vandermeer](#), U-M EEB, and Dr. Íñigo Granzow-de la Cerda (University of Barcelona, Spain) on the study of the regenerating hurricane forests of Eastern Nicaragua.



[Read more »](#)

## Video: FRACKTOPIA

The gas and oil recovery techniques of hydraulic fracturing, or fracking, and horizontal drilling are changing the



American energy landscape. What are the potential effects of these technologies? The U-M College of Engineering has created a multimedia site to explore the future of fracking in Michigan. Professor [Knut Nadelhoffer](#) is interviewed in the video.

[Read more and watch »](#)

## Video: Belle Isle BioBlitz with EEB grads and Detroit high schoolers

About 80 students from Detroit's Western International High School gathered to conduct a biodiversity



survey on Belle Isle with the help of U-M EEB volunteers. The students began to locate and identify mammals and birds; trees, shrubs and other plants; amphibians; reptiles; insects; and fungi on Wednesday morning, April 24, 2013. But, even the best laid plans sometimes fall victim to the weather.

[Read more and watch »](#)



When people or animals are thrust into threatening situations such as combat or attack by a predator, stress hormones are released to help prepare the organism to defend itself or to rapidly escape from danger—the so-called fight-or-flight response.

Now U-M researchers have demonstrated for the first time that stress hormones are also responsible for altering the body shape of developing animals, in this case the humble tadpole, so they are better equipped to survive predator attacks. Pretty cool, huh?

[Read more »](#)

## Alum news EEB buzz . . .

We love to hear about your latest and greatest! Please include a recent photo of yourself. Feedback on our e-newsletter is welcome. What articles did you like reading? What would you like to hear about in future issues?

[Read more alumni news and send yours »](#)

## Giving opps

Your support allows us to provide opportunities that transform lives, enrich the community and shape our university today and tomorrow. Visit EEB's giving page to see our current funding priorities.

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## EEB news

### UMMZ announces student awards

Thursday, May 02, 2013

Each year, the U-M Museum of Zoology uses its historical endowments, some of which date from the early 1900s, to support graduate students research projects through scholarship awards.

**The Mary R. Swales Scholarship** for a graduate student in the Museum of Zoology who is researching birds, was awarded to Omar Bonilla.

Bonilla researches at the E.S. George Reserve in Pinckney, Mich., investigating the role of native ornithochorous plants and avian seed dispersers in the spread of invasive ornithochorous plants. Ornithochorous plants share a mutualistic interaction with birds, whereby birds eat the plant's fruit and disperse its seeds. Bonilla will attempt to identify the spatial patterns of seed deposition of these invasive plants, and to classify the avian seed disperser community by their importance in spreading invasive species of the plants. Bonilla, whose advisor is Professor Elizabeth Pringle, received \$2,000.

Bradshaw Hall Swales married Mary Rhoda Medbury in 1902. Swales earned his undergraduate and master of law degrees from U-M in 1896 and 1897. He passed the bar exam later that year and began to practice law in Detroit. His interest in birds began at an early age. He donated a collection of about 2,000 bird skins to the U-M Museum of Zoology and upon his death left the museum his considerable ornithological library. From 1912, Swales was a member of the museum's governing board and was an honorary assistant in ornithology.



**The Robert R. and Francis H. Miller Scholarship**, which supports graduate student research in the museum for students in the field of ichthyology, went to Alison Gould.

Gould's dissertation research seeks to define the population genetic structure of the sea urchin cardinalfish, *Siphamia versicolor*, and its luminous bacterial symbiont, *Photobacterium mandapamensis*, in Okinawa, Japan. This summer she will be sampling populations of the fish at various coral reefs around Okinawa in order to compare the geographic patterns of genetic structure between populations of the host fish and its symbiont in the region. Gould, whose advisor is Professor Paul Dunlap, received \$1,000.

The Robert R. and Francis H. Miller Endowment was set up by their children in 2003. Miller and his wife, Francis Hubbs Miller, worked in the Fish Division for many years, he as curator of fishes and she as a research associate. He was the foremost authority on the fishes of Mexico (and wrote the definitive book on the subject, published posthumously) and she was his partner in almost everything they did, according to Professor William Fink.

Jen-Pan Huang and Rob Massatti received the **Hinsdale Scholarship**, which was created to support doctoral student research in the museum.

Huang is interested in evolutionary processes that generate the diversity of life forms. Currently, he is working on testing the hypothesis of adaptation by interspecific hybridization in Hercules beetles. Different colorations found in Hercules Beetles are believed to have camouflage functions. Different species that live in the same habitat, however, share similar coloration. Since hybridization is possible between species in Hercules Beetles, they are thus excellent candidates for testing if hybridization could have play a role in promoting adaptation and shaping species specific morphology in nature. Huang, whose advisor is Professor Lacey Knowles, was awarded \$4,000.



Massatti is interested in the diversity and distributional patterns of plants that occupy mountainous regions. He studies the effects of Pleistocene glaciations on plant diversification at different spatial scales (regional and intercontinental) using *Carex* section *Racemosae*, which includes about 60 species distributed primarily in eastern Asia and western North America. Additionally, he investigates how

historical and contemporary environmental gradients influence species' distributions by utilizing fine-scale distributional data of the flora of the southern and central Rocky Mountains.

"The results of my research will be applicable not only to future studies of macroevolution, but it will inform conservation professionals about the potential impacts of climate change on plants in montane ecosystems," Massatti said. Massatti, whose advisors are Knowles and Dr. Tony Reznicek, received \$4,000.

Edwin C. Hinsdale, who the scholarship was named for, was one of the best known and most highly honored pioneer citizens of Detroit. He gained distinction in civic affairs, as a member of the bar, and for his boundless charitable works. He attended U-M for one year from 1847 – 1848. He was admitted to the Michigan bar in 1858 and practiced until his death nearly 40 years later. He was the treasurer of the city of Detroit from 1871- 1876, bringing order out of a chaotic time. In 1921, Genevieve S. Hinsdale bequeathed a part of her estate to establish a scholarship in her father's name.

Pascal Title was awarded the **Charles F. Walker Scholarship**, which supports graduate student field research in herpetology.

Title's research involves investigating controls on the accumulation of species. Different regions appear to support different amounts of biodiversity, and this often depends on the phylogenetic origin of the groups under study. He is interested in determining if different climatic zones lead to differential species diversification. He's also interested in what controls species' geographic distributions.

"Abiotic factors such as temperature and precipitation could be the most important factors, or species interactions and character displacement might play a prominent role in the maintenance of range boundaries, and this may be important in the context of secondary contact following speciation," he said. Title will use Australian reptiles as a study system to address these questions, and will collect data at both continental scales, as well as at population-level scales. Title, whose advisor is Professor Dan Rabosky, received \$2,500.

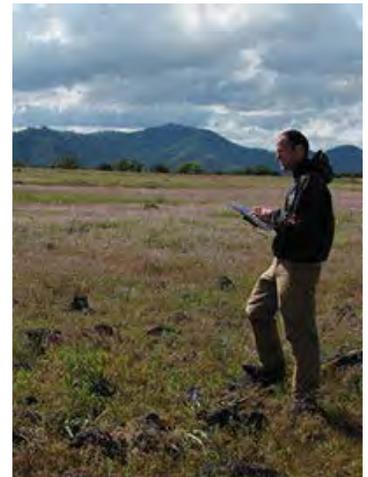
Charles F. Walker was an honored and much loved curator from 1947 - 1975. His former students and faculty associates created the fund to commemorate and extend the activities he was famous for. He influenced many students in different fields of zoology well beyond herpetology.

Read about the Donald W. Tinkle Scholarship, UMMZ's most prestigious student scholarship, which was awarded to Jingchun Li, in previous [EEB web news](#).

**In this article:**

[Bonilla, Omar](#); [Duda, Thomas](#); [Gould, Alison](#); [Huang, Jen-Pan](#); [Knowles, L. Lacey](#); [Massatti, Rob](#); [Pringle, Elizabeth](#); [Rabosky, Daniel](#); [Reznicek, Anton \(Tony\)](#); [Title, Pascal](#)

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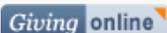
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## Yael Artzy-Randrup

Postdoctoral Fellow

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### Mentor

[Mercedes Pascual](#)

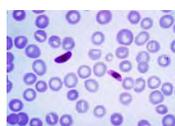
### Fields of study

Theoretical ecology and evolution, epidemiology, network theory

### UM affiliation

- Department of Ecology and Evolutionary Biology
- College of Literature, Science, and the Arts

### Research feature



Modeling of parasite diversity could help eliminate malaria

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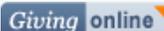
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## Mary 'Molly' Rorick White

Postdoctoral Fellow

Pascual Lab

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### Fields of study

Evolution, genetics

### Academic background

Ph.D., Yale University Graduate School of Arts and Sciences, 2011

### Research interests

I will be studying the evolution of malaria var genes in the context of the parasite's transmission dynamics. The aim is to understand the forces and constraints that determine var gene diversity (which is extensive and complex), since this could substantially improve the design of surveillance methods, vaccines and interventions.

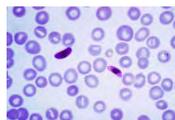
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### UM affiliation

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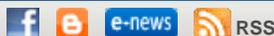
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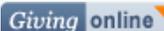
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## Mercedes Pascual

Pascual Lab website

Howard Hughes Medical Institute Investigator

Rosemary Grant Collegiate Professor of Ecology and Evolutionary Biology

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### Fields of study

Theoretical ecology and disease ecology

### Academic background

I received my Ph.D degree in 1995 from the Joint Program of the Woods Hole Oceanographic Institution and the Massachusetts Institute of Technology. I was awarded a U.S. Department of Energy Alexander Hollaender Distinguished Postdoctoral Fellowship for studies at Princeton, and more recently, a Centennial Fellowship in Global and Complex Systems from the James S. McDonnell Foundation. I am currently affiliated with the Center for the Study of Complex Systems at U-M and with the Santa Fe Institute as an external faculty.

### Graduate students

[Andres Baeza](#), [Edward Baskerville](#), [Pamela Martinez Vargas](#), [Andrew Strayer](#)

### Postdoctoral fellows

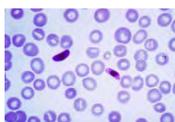
[Yael Artzy-Randrup](#), [Mary 'Molly' Rorick](#)

[Mercedes Pascual's HHMI webpage](#)

### UM affiliation

- Department of Ecology and Evolutionary Biology
- Center for the Study of Complex Systems

### Research feature



Modeling of parasite diversity could help eliminate malaria

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### Related news

On the U-M Gateway: irrigation in arid regions can increase malaria risk for a decade



New irrigation systems in arid regions benefit farmers but can increase the local malaria risk for more than a decade, a new study in northwest India led by EEB graduate student [Andres Baeza](#), concludes.

[More info »](#)

Early warning system of malaria epidemics in northwest India developed

Sea surface temperatures in the tropical South Atlantic Ocean can be used to accurately forecast

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malaria epidemics thousands of miles away in northwestern India, a U-M theoretical ecologist has found.

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### International Ecology and Evolution of Infectious Disease Conference hosted at U-M

The University of Michigan hosted the 10<sup>th</sup> Annual Workshop and Conference on Ecology and Evolution of Infectious Disease in May 2012.



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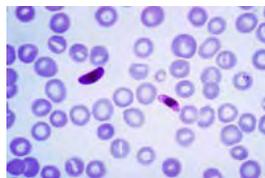
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Blood smear of *Plasmodium falciparum* from Wikipedia. *P. falciparum* is a protozoan parasite, one of the species of *Plasmodium* that cause malaria in humans.

## Modeling of parasite diversity could help eliminate malaria

3/28/2013

Malaria is an infectious disease that is estimated to kill more than half a million people every year, mostly young children in Africa. It is spread by mosquitoes infected with *Plasmodium* parasites that attack red blood cells in the human body. *Plasmodium falciparum*, the species that is responsible for most of these deaths, causes malaria by entering red blood cells and releasing antigens that travel to the surface of the cells, where they change the adhesion properties.

*P. falciparum* is particularly dangerous because of its ability to vary the antigens displayed on the cell surface. This process, known as antigenic variation, helps to maintain infections for extended periods of time by allowing the antigens to stay one step ahead of the immune system (a process known as immune escape). The origins of antigenic variation lie in the fact that each *P. falciparum* genome has a repertoire of between 50 and 60 var genes that code for the variability of a major antigen that is responsible for immune escape in malaria. An antigen causes the production of antibodies. When antibodies bind to antigens, similar to the fit between a lock and key, this helps the immune system fight disease.

In a paper published online Dec. 18, 2012 in the journal *eLife*, a team led by postdoctoral fellow [Yael Artzy-Randrup](#) describes the development of a new computational model of this highly diverse and complex system. The model simulates the dynamics of all the unique combinations of var genes in a population of hosts and shows that even with high rates of recombination, the parasite population self-organizes into a limited number of coexisting strains.

By investigating genetic variation at both antigenic sites and regions of the genome that do not code for antigens, Artzy-Randrup and her colleagues suggest that immune selection – the selection imposed on var repertoires by the buildup of specific immunity at the population level – plays a central role in structuring parasite diversity.

The new model should lead to a better understanding of the epidemiology of *Plasmodium* and other pathogens that work in similar ways, including those that cause sleeping sickness, Lyme disease and gastroenteritis. The model is also expected to help with global efforts to eliminate malaria and other diseases.

Artzy-Randrup's co-authors include [Mary Rorick](#), postdoctoral fellow and their mentor, Professor [Mercedes Pascual](#).

[eLife Research Journal](#)

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## EEB events: EarlFest: symposium in honor of Professor Earl Werner

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Please join Earl Werner's colleagues, collaborators, and former students and postdocs to celebrate his career and influence on the field of ecology. Two of his former students have organized a symposium. More information and registration links are below.

The symposium will kick off at 8.30 a.m. with coffee. Join us to listen to a great lineup of speakers selected from among people connected to Earl at different times in his career and from different perspectives. A buffet lunch will be served on the third floor terrace. Breaks will be held in the north atrium.

[Register here.](#)

**Start Time:** 5/18/2013 8:30 am

**Location:** Room 1360 East Hall

**Website:** [http://www.lsa.umich.edu/eeb/news\\_events/events/EarlWerner.asp](http://www.lsa.umich.edu/eeb/news_events/events/EarlWerner.asp)

**Contact:** [degold@umich.edu](mailto:degold@umich.edu)

**To view all upcoming events, please [click here.](#)**

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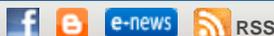
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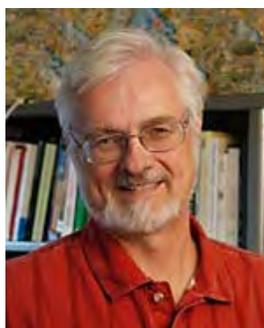
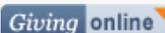
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### John Vandermeer

**Asa Gray Distinguished  
University Professor of Ecology  
and Evolutionary Biology**

**Alfred T. Thurnau Professor**  
Ph.D., University of Michigan

[Vandermeer Lab](#)

[VandermeersBlog](#)

[Sustainable Food  
Systems at U-M  
website](#)

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#### Fields of study

Ecology, theoretical ecology, tropical ecology, agroecology

#### Academic background

Ph.D., University of Michigan; Post Doc, University of Chicago; Faculty member at U-M since 1971.

#### Graduate students

[Omar Bonilla](#), [Naim Edwards](#), [Paul Glaum](#), [Aaron Iverson](#), [Beatriz Otero Jimenez](#), [Lizette Ramirez](#), [Mariana Valencia-Mestre](#), [Theresa Wei Ying Ong](#), [Senay Yitbarek](#)

#### UM affiliations

- Department of Ecology and Evolutionary Biology
- Center for the Study of Complex Systems
- Michigan Center for Theoretical Physics
- School of Natural Resources and Environment
- Latin American and Caribbean Studies
- American Studies

#### Related news

##### Passing on the chair baton from Goldberg to Vandermeer

After a successful 12 years as EEB chair, Professor Deborah Goldberg has officially passed the baton to Professor John Vandermeer for the 2013-2014 academic year.



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##### UROP Outstanding Poster Award to Hajian-Forooshani

Zach Hajian-Forooshani won the Undergraduate Research Opportunity Program Outstanding Poster Award.



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##### Welcome ED-QUE2ST students!

A warm EEB welcome to 11 undergraduate students from across the United States, including Puerto Rico, who were selected to participate in the 2013 ED-QUE<sup>2</sup>ST REU program.



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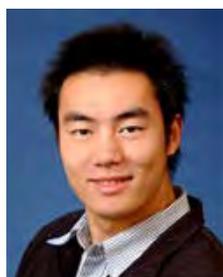
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## ***EEB buzz -- alumni news***

Send your news to [eeb-webinfo@umich.edu](mailto:eeb-webinfo@umich.edu). We're interested in where you're working, your contact information, new publications, awards, honors. If you have a good story to tell, we'd like to hear your latest adventures. We'll publish some of this information on our website. Don't forget photos!



### **Zhi Wang**

**(Ph.D. EEB 2010)**

Zhi Wang is an assistant professor at Arizona State University. He is teaching undergraduate genetics, and some graduate level genomics courses. "My major research area is computational genomics and evolutionary medicine, including network biology, and cancer genomics," Wang said. Wang's advisor at U-M was Professor Jianzhi Zhang.



### **Javier Ruiz**

**(Ph.D. EEB 2008)**

Javier Ruiz is director of the [Biodiversity Project, Nicaragua](#), a research initiative conducting research in Eastern Nicaragua, and a visiting scholar at Bluefields Indian and Caribbean University (2008 to present).

Ruiz is collaborating with Professor John Vandermeer, U-M EEB, and Dr. Íñigo Granzow-de la Cerda (University of Barcelona, Spain, a former assistant research scientist at U-M EEB) on the study of the regenerating hurricane forests of Eastern Nicaragua.

[Continue](#)


### **Undine Jost Zengel**

**(B.Sc. Biology 1984)**

We heard from Undine Jost Zengel who wrote this about an article on the Museum of Zoology move in the September 2012 EEB e-newsletter: "Thank you so much for this newsletter! The article on moving the collection is particularly interesting to me as my student job was to check both the fluid and bone collections against the old volumes of data. I also worked on numbering bat bones (they have a lot, and very tiny!) as a student and spent many, many hours in the field museum."

[Continue](#)


### **Ryan Bebej**

**(Ph.D. EEB 2011)**

Ryan Bebej accepted a position as assistant professor in the Biology Department at his alma mater, Calvin College in Grand Rapids, Mich. He'll be teaching courses in anatomy, physiology, and evolution beginning in the fall of 2012. "I plan to continue collaborating with folks in the Museum of Paleontology at U-M and will be getting undergraduate students at Calvin involved in those research projects," Bebej said.



## Aley Joseph

**(M.S. EEB 2010, M.P.H. Epidemiology 2011)**

Aley Joseph graduated from the University of Michigan [School of Public Health](#) in December 2011 (MPH Epidemiology). She was hired as an epidemiologist in January 2012 for the [California Rural Indian Health Board](#), a health research and consulting company that was founded by and serves rural Native American tribes in California.

"I am coordinating an NIH-funded dental health intervention study right now. It has been great so far," said Joseph.

The California Rural Indian Health Board was formed to provide a central focal point in the Indian health field in California for planning, advocacy, funding, training, technical assistance, coordination, fundraising, education, development and for the purpose of promoting unity and formulating common policy on Indian health care issues.



## Alumnus feature on Sophia Holley Ellis

**(B.A. Biology and German 1949, M.S. Botany 1950, M.A. German 1964)**

Sophia Holley Ellis retired in June 2006 after 56 years as a biology and German teacher in the Detroit Public Schools. Over the years, she has privately funded several students' college education. Now, through a \$25,000 gift creating the Sophia Holley Ellis Scholarship endowment, Ellis will extend her support to students with financial need in the [College of Literature, Science, and the Arts](#) – with priority given to students from the Detroit Public Schools. The scholarship was established in June 2009 with the first one awarded during academic year 2011-2012.

[Continue](#)



## Prosanta Chakrabarty

**(Ph.D. EEB 2006)**

[Prosanta Chakrabarty](#) recently wrote a book called, "A Guide to Academia: Getting into and surviving grad school, postdocs and a research job," published by Wiley. It is now available on [Amazon](#).

"I started writing the book as a little side project without much intention of it being anything but a little pamphlet reference to give to undergrads and grad students," Chakrabarty said. "I wanted to put all the advice I was given by lots of good people (mostly at Michigan) onto paper. I had about 50 or so pages when I was approached by an editor for Wiley at a scientific conference who wanted to know if I had any ideas for books. (He sought me out because of some of the press I was getting during the oil spill in Louisiana.)

[Continue](#)



## Mindy (Greenblatt) Stroom

**(B.S. Biology 2001, B.M.A. Voice Performance 2001, M.S. Rackham Orthodontics)**

After her graduation from the University of Michigan, Mindy Stroom attended the Harvard School of Dental Medicine and graduated with a D.M.D. in 2005. She then returned to U-M for her residency in orthodontics through the Rackham Graduate School. In 2008, she got her M.S. in orthodontics from Rackham. Since that time, she moved to Solon, Ohio, where she started an orthodontic practice called [Stroom Orthodontics](#). She lives in Solon with her husband, Jason, (a 2005 graduate of U-M Dental School and a periodontist), and her son, Sam, who was born in October 2010. She is due with her second child in July 2012. ([email](#))



## Richard T. Hanlin

**(Ph.D. Botany/Mycology 1961)**

After completing his doctoral dissertation in August 1960, Richard Hanlin, professor emeritus, accepted a position as mycologist in the Department of Plant Pathology of the Georgia Experiment Station in Griffin, a unit of the University of Georgia College of Agriculture. Hanlin conducted research on plant pathogenic ascomycetes. In 1967, he moved to the main campus in Athens and added teaching and mentoring graduate students to his research duties. Later in his career, he developed collaborative research projects in Venezuela, Brazil, Mexico and other countries. Hanlin retired in June 2001 after 41 years' service. Since that time he has continued to work as a volunteer in the Mycological Herbarium of the [Georgia Museum of Natural History](#) and he regularly attends the [Mycological Society of America](#) meetings.



## Maggie Morris

**(B.S. Biology 1995)**

Maggie Morris received a Junior Faculty Award from the American Diabetes Association for her grant entitled "The role of macrophage 12/15-lipoxygenase in the innate autoimmune responses of type 1 diabetes" in the summer of 2011. "I received this news just one week before the birth of our second daughter," said Morris. "It's been an exciting summer for me, to say the least! All the best as you lead the EEB into its second decade!" she wrote to Professor and Chair Deborah Goldberg.

Dr. Morris is an assistant professor of research in the [Department of Internal Medicine at Eastern Virginia Medical School](#).



## Jonathan Nelson Wu

**(M.S. Biology 1990)**

Jonathan Nelson Wu is assistant dean for academic programs at [Temple University, Japan Campus](#). He teaches introductory courses in biology and mathematics.



## Gail L. McCormick

**(B.S. Biology/EEB concentration 2010, B.T.A. Theatre Arts)**

Gail McCormick is a Ph.D. candidate in the ecology program at Penn State. She also has an unusual artistic flair for [paper cutting](#) and all things paper.

According to a [blog post on All Things Paper](#) by Ann Martin, McCormick began making collage-like birthday cards while in college and was hooked. This led to more complex designs. "I think it's pretty incredible Gail can capture so much expression by layering cut pieces of paper," writes Martin.

[Continue](#)



## David Alonso

**(former postdoctoral fellow with Professor Mercedes Pascual)**

Dr. David Alonso, former postdoctoral fellow in Professor Mercedes Pascual's lab, was awarded a Ramon y Cajal Fellowship from the Spanish Government in 2010. Alonso is an assistant research professor at the Institute for Advanced Studies of Blanes (CEAB), part of the Spanish Institution of Scientific Research (CSIC). He moved back to Spain in July 2011 to start the five-year position. The CSIC has several ecology centers across Spain; the Biological Station of Donana in Sevilla is best known worldwide. "Blanes is a smaller center with potential to grow," he said. "I am looking forward to contributing to the findings and research of this center."

[Continue](#)



## Judith Bronstein

**(M.S. EEB 1981, Ph.D. EEB 1986)**

Dr. [Judith Bronstein](#) has been selected as a University Distinguished Professor in the Department of Ecology and Evolutionary Biology at the University of Arizona. This is the highest honor awarded by the university to faculty members with outstanding records of creative scholarship and exceptional contributions to teaching, advising and mentoring of undergraduate students. Bronstein's Ph.D. dissertation was titled "Coevolution and constraints in a neotropical fig-pollinator wasp mutualism." Her advisor was Professor Beverly Rathcke.

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## ***Knute Nadelhoffer***

**Professor**

**Director of the Biological Station**

**Ph.D., University of Wisconsin-Madison, 1983**

**Nadelhoffer Lab**

### **Contact information**

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Email: [knute@umich.edu](mailto:knute@umich.edu)

### **Fields of study**

Ecosystem ecology, terrestrial biogeochemistry, global change

### **Academic background**

I received my Ph.D. from the University of Wisconsin-Madison in 1983. I began a postdoctoral fellowship at the Ecosystems Center of Marine Biological Laboratory (Woods Hole, Massachusetts) in 1983. I worked as a Research Scientist at the MBL until June 2002 when I left to spend a year as co-Director of the National Science Foundation's Ecosystem Studies Program. I joined the University of Michigan as Director of the Biological Station in June 2003 and as Professor in the Department of Ecology and Evolutionary Biology in September 2003. I also served as Panel Manager for the USDA Ecosystems Program in 1992 and was a Fulbright Research Fellow at the Norwegian Institute of Water Research (Oslo) and the Norwegian Institute of Forest Research (Aas) in 1996-97.

### **Graduate students**

[Buck Castillo](#), [Susan Cheng](#), [Jasmine Crumsey](#)

### **Research scientists and postdoctoral fellows**

[Apolline Auclerc](#), [Luke Nave](#)

### **U-M Biological Station website**

### **UM affiliation**

- Department of Ecology and Evolutionary Biology
- U-M Biological Station (Pellston)

### **Research feature**



**Soils in newly forested areas store substantial carbon that could help offset climate change**

[More info »](#)

### **Related news**

#### **Nadelhoffer coauthors report on ecological fracking impacts in Michigan**

U-M researchers recently released seven technical reports that together form the most comprehensive Michigan-focused resource on hydraulic fracturing.



[More info »](#)

#### **Cheng wins Michigan Space Grant Consortium award**

EEB doctoral student [Susan Cheng](#) was awarded \$5,000 from the Michigan Space

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[CV \(PDF\)](#)

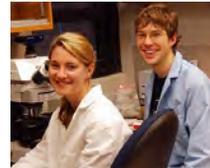


Grant Consortium for summer research at the U-M Biological Station.

[More info »](#)

### Ecosystems publication includes undergraduate authors

At the U-M Biological Station, researchers analyzed differences that affect the balance of competition between trees, which could have consequences for future forest composition.



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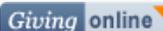
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## EEB news

### On U-M Gateway: FRACKTOPIA video with Nadelhoffer

Tuesday, April 16, 2013

The gas and oil recovery techniques of hydraulic fracturing, or fracking, and horizontal drilling are changing the American energy landscape. What are the potential effects of these technologies? The U-M College of Engineering has created a multimedia site and is cosponsoring a town hall with Michigan Radio on April 16 to explore the future of fracking in Michigan.

Professor Knute Nadelhoffer is interviewed in the video at 13:16 and 19:20. [Watch the video and find out more.](#)

[U-M Gateway](#) (scroll through the featured photos at the top of the page)



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## EEB news

### ***U-M News video about BioBlitz on U-M Gateway***

Wednesday, May 08, 2013

About 80 students from Detroit's Western International High School gathered to conduct a biodiversity survey on [Belle Isle](#) with the help of U-M EEB volunteers. The students began to locate and identify mammals and birds; trees, shrubs and other plants; amphibians; reptiles; insects; and fungi on Wednesday morning, April 24, 2013. But, even the best laid plans sometimes fall victim to the weather.

Unfortunately, it was a cold and rainy (sometimes snowy) morning and so between creatures taking cover and worksheets getting soggy, not to mention cold and wet students, the group detoured into the Belle Isle Nature Zoo and the Anna Scripps Whitcomb Conservatory to make the most of the day. They did manage to gather some useful information, mostly on birds and plants, which will be entered into the inaturalist database.

The purpose of the annual event is to promote local ecological knowledge and to increase participation of underrepresented groups in ecological education. The Belle Isle event is part of BioBlitz, a series of rapid biodiversity surveys being conducted this year on college campuses across the country, coordinated by local chapters of the Ecological Society of America's SEEDS (Strategies for Ecology Education, Diversity and Sustainability) program.

The outing was sponsored by the U-M's Department of Ecology and Evolutionary Biology, School of Natural Resources and Environment, U-M chapter of the Ecological Society of America's SEEDS program, Detroit Zoological Society and Belle Isle Conservancy.

Special thanks to EEB and biology student volunteers: Beatriz Otero Jimenez, one of the primary event coordinators and a graduate student mentor with SEEDS, Marcella Baiz, Katy Lazarus (undergraduate), Naim Edwards, Thomas Jenkinson, Clarisse Betancourt, John Marino, Tatia Bauer, (undergraduate), Mariana Valencia Mestre, and Omar Bonilla.

U-M News Service [video](#)

Michigan Radio [podcast](#)

#### **In this article:**

[Baiz, Marcella](#); [Betancourt, Clarisse](#); [Bonilla, Omar](#); [Edwards, Naim](#); [Jenkinson, Thomas](#); [Marino, John](#); [Otero, Beatriz](#); [Valencia, Mariana](#)

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**Giving online**



A wood frog tadpole with a normal-size tail.

## Stressed-out tadpoles grow larger tails to escape predators

5/7/2013

When people or animals are thrust into threatening situations such as combat or attack by a predator, stress hormones are released to help prepare the organism to defend itself or to rapidly escape from danger—the so-called fight-or-flight response.

Now U-M researchers have demonstrated for the first time that stress hormones are also responsible for altering the body shape of developing animals, in this case the humble tadpole, so they are better equipped to survive predator attacks.

Through a series of experiments conducted at field sites and in the laboratory, Professors Robert Denver and Earl Werner, director of the E.S. George Reserve, demonstrated that prolonged exposure to a stress hormone enabled tadpoles to increase the size of their tails, which improved their ability to avoid lethal predator attacks.

"This is the first clear demonstration that a stress hormone produced by the animal can actually cause a morphological change, a change in body shape that improves their survival in the presence of lethal predators. It's a survival response," said Denver.

The team's surprising findings are detailed in a paper published online March 5, 2013 in the journal [Proceedings of the Royal Society B](#). First author of the paper is Jessica Middlemis Maher, a former U-M doctoral student, now at Michigan State University, who conducted the work for her dissertation.

[U-M News Service press release](#)

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## EEB news

### Picture perfect

Monday, December 12, 2011

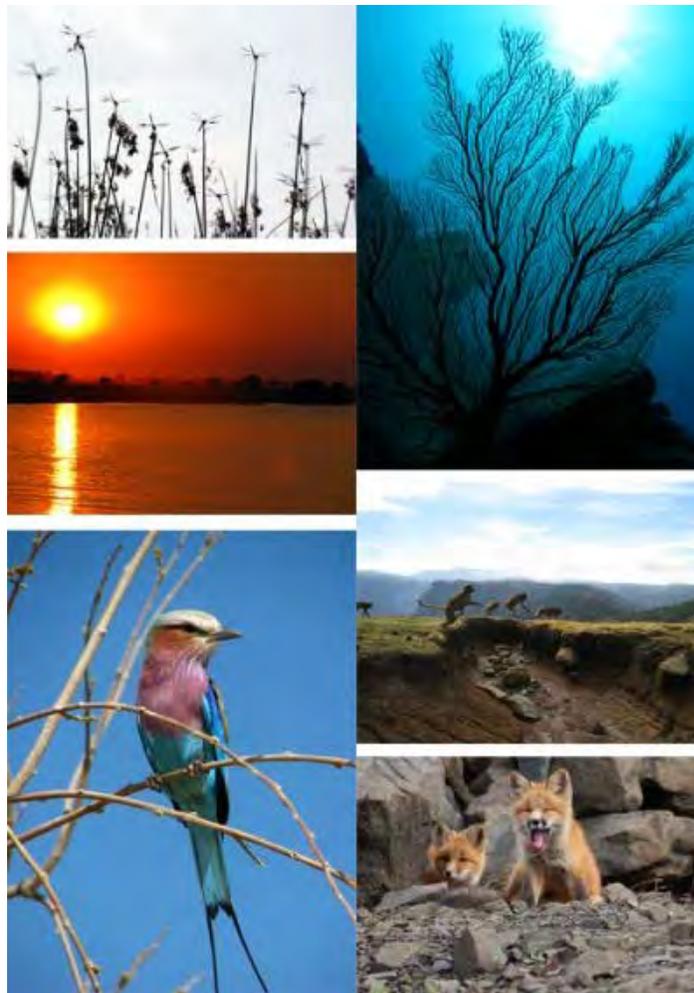
Honorary Photographer at Large Photo Contest winners

Congratulations to our new Honorary Photographer at Large, Susanna Messinger, who came in first place with "A fleet of dragonflies."

Second place goes to Alison Gould for "Gorgonian." Third place goes to Kevin Bakker for "Sunset on the Okavango Delta, Botswana" Honorable mentions go to Rachel Cable for "Geladas in flight," Jason Dobkowski for "Sleepy kit" and Kevin Bakker for "Lilac breasted-Roller, Kalahari Desert."

Messinger receives the honorary title for the year of "Photographer at Large" in memory of David Bay who was the self-described "photographer at large" for EEB and its predecessor departments for 34 years. He touched the lives of hundreds of faculty, students and staff with his humor, good nature and expertise.

Congratulations to all of our winning photographers and thank you to everyone who submitted a photo and/or voted in the contest. As usual, there were so many beautiful photos that voting was difficult. The photo contest will return next fall. [All of the photos can be viewed here.](#)



#### In this article:

Cable, Rachel; [Dobkowski, Jason](#); [Gould, Alison](#); Messinger, Susanna

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