



Biology Buzz

New Bio Faculty

Erin McMullin

Visiting Assistant Professor



Ph.D in Biology, Penn State U, '03
B.A. in Biology, Oberlin College, '93

I use molecular genetic techniques to answer phylogenetic and ecological questions about natural populations. Currently I am working with a species of African cichlid (a fish) which may be extinct in the wild and that is kept in culture at a number of zoos in the United States. I am using genetic techniques to look at the overall genetic diversity of the captive populations, to estimate population sizes, and to measure the amount of gene flow between populations. I will be teaching BIO 201 and a 300 level in the spring called "Symbiosis", as well as a non-majors course called Life in Extreme Environments. I look forward getting to know the students in my classes, and I hope to have Denison student researchers beginning in the summer of 2010.

BioReserve (DUBR) Updates:

- Invasive Plant Species identified: 14 with hopes to eradicate 3 next summer — Permanent Summer Student to assist with this huge task
- 70% of invasive plants were removed from the Quarry field which was the worst of all the fields
- Another new parking lot at Taylor Oches for researchers & maintenance cars only
- New signs installed announcing dogs on leash rule and no mushroom hunting

Jenny Albertz



There is not one particular aspect of biology that I love the most, or one specific event that caused me to fall in love with biology; I have been falling in love with it since grade school. I find it fascinating to discover how things work and why we and other organisms behave as we do. Having the opportunity to dissect brains, make cultures of different yeasts, observe and collect animals from nature in a class is amazing! The fact that biology provides us with the ability to study nearly any process, behavior, system, organism, or mechanism that occurs in our environment is one of the reasons that it continues to entice me. Additionally, because the field of biology

2009-2010 Fall Student Fellows

changes so often it is very exciting to read and discover new things that are being learned and published every day. I love being able to study the mechanisms that regulate my body and brain in one class, and then go to my next biology class to learn about animal courting rituals—how fun! While at Denison, my interest in biology has flourished. I have been exposed to an enormous range of topics from immunology to genetics to neurology to ecology and animal behavior, as well as numerous others. I am especially thankful for all of the experiences and learning that I have achieved within the biology department, as well as very thankful to the faculty for their time and acumen. I will use the knowledge that I have gained, as well as the curiosity for questions that remain unanswered, to shape and motivate my future professional goals and biological ventures.

Chase Foy

"Chase, are you feeling okay?" This was the response from my family members when I told them

that I wanted to be a biology major in the pursuit of medical school. I remember their reaction perfectly, and I was somewhat offended. But they had a point...I was not the greatest high school student, and I definitely was not the person that you would want to trust your life with. I did not have anything close to straight A's, heck, I barely graduated in the top half of my class. I was a lot more interested in my golf game than the text books. I think they saw me slacking off through business school to obtain a thrilling job working 40 hours a week in a cubicle. Like a specified cell receiving its last signal to differentiate, a dormant neuron reaching its threshold voltage to create an action potential, or a group of microorganisms that achieve a high enough concentration to be able to create a biofilm...actually just go ahead and call me a late bloomer...that's sciencey enough. My educational revelation did not come as a surprise to me, but I know I could not have done it at any other institution. I have had

Cont. pg 2 Fellows

Where Are Our Biology Majors Now?

Lindsey Bostelman '05 graduated from The Ohio State School of Medicine in spring '09. She is currently a resident at Toledo Hospital, with plans to specialize in family medicine. • **Megan Ansbros '09** received a Fulbright Fellowship to do research at the Chromatin and Epigenetics Laboratory at the Innsbruck Medical University in Austria.

Sadie Orlowski '09 was also a Fulbright recipient. • **Alice Brindle '08** received a grant from The American Society of Primatologists to support her dissertation research on Hoolock Gibbons in Bangladesh. She and her research assistant, **Sarah Karr '09**, remained for a three month stay. • **Benjamin V. Bring '07** is a medical student and is attending medical school at Virginia Tech's Virginia

College of Osteopathic Medicine in Blacksburg, Virginia. • **Chris Reinhackel '08** was accepted into the University of Texas Medical School-Houston & is a researcher with several doctors from UTH focusing on clinical trials of new HIV medication. • **Laurel Symes '07**, was recently on NPR talking about the tree crickets she is researching for her Ph.D. at Dartmouth.

Cont. pg 2 Where?

Chase Foy



Fellows

cont. from front

countless opportunities, from TAing and tutoring students, to microbiological research on a cystic fibrosis lung cultivator; I cannot help but think that my educational experiences would have been dramatically different elsewhere. The passion for science that the faculty and department demonstrate has rubbed off on me. In the last few years, learning for me has not been restricted to the classroom. I find myself thinking all the time about biological processes outside of class. I ask and develop questions for everything. I am proud to say that I think like a scientist. I know my profession that I choose I will daily use the lessons and knowledge I have learned from the biology department, and I know that my career will be exciting as I will be practicing the science I have too become passionate about. I have been prepared to embark on a scientific journey with many more paths available to me than I could ever imagine. I greatly look forward to my life as a scientist.

Alyssa Rossodivita

If you know me at all, you will not be surprised to hear that I actually remember the day in elementary school when I first learned about cells. My teacher drew a blob on the board, added a couple of colorful little circles and squiggles in the middle of the blob, and began to tell us the story of this tiny,

cellular world to which I was oblivious, but by which I was quickly fascinated. It was after that day in Mrs. Karikas' fourth grade class that I went home and—enthusiastically—told my mom all about diatoms, amoebas, cell membranes, and cell nuclei (I mean, who could resist?). I told her that these cells went around eating things, digesting, making energy, and...living! Just like us! And wait, Mom, the best part is: we are *made up* of these tiny cells!!! From there, it only became worse: every time I would see the word “cell,” a little bubble of curiosity and excitement grew inside me that just got increasingly bigger as I figured out just how much there was to learn about these cells, how amazingly self-sufficient and complex they were, and their omnipresence in our lives. You can imagine my reactions freshman year as I browsed the biology textbooks in the Denison Bookstore and saw what I would be learning throughout my next four years. Now, here we are, and I still get that bubble of excitement, making me humbly aware of just how lucky I am to have been here, read these books, heard these lectures, done those labs (yes, even the labs...), and now to be working in Dr. Thompson's lab, growing and experimenting with DNA in my very own yeast cells. Through these last few years, I have made it my charge always to try my best to appreciate the amazing intricacy and simplicity of the living world, our

bodies, and our DNA. This interest and admiration I have for the molecular world is still very much alive in me, and even with my plans to work in public health, I have a hunch (and a hope) that I will be seeing these things in some capacity of my career, someday. But, even still, I cannot see this bubble inside me ever being popped. Biology is just too cool.

Nicole Yohn

Biology always seemed like it was the fit for me. Or at least generally speaking, the sciences just seemed to always be my thing. Don't get me wrong, being a student at Denison and being good at science doesn't mean you can ace every class; instead these are the classes that I look forward to and appreciate the most. This is because what the biological sciences hold are more than just a resource of knowledge but also opportunity. Understanding the role of an amino acid structure unlocks the key to a protein's folding structure that can then unlock the key to a debilitating disease such as muscular dystrophy. Inside each structure, molecule, cell, and organism I can see opportunity. Within four years I've had the chance to capture and classify over one hundred species of insects, attempt to isolate the eve homoeobox gene from a green sea urchin, and try to determine the regulation pathway of carcinomic human bladder cells.

Cont. pg 3 Fellows



Alyssa Rossodivita



Burr oak in honor of Bob Haubrich
(plaque text illustrated at right)

“...WHO NEVER LACKED
APPRECIATION OF EARTH'S
BEAUTY OR FAILED
TO EXPRESS IT.”

-Robert Louis Stevenson

45 YEARS DEDICATED TO DENISON

Continued thanks to all alumni and friends who have given gifts to the Haubrich Memorial Development Fund (22029). Your support has helped fund student projects.

Where? *Cont. from front*

You can hear her and the crickets at <http://www.npr.org/templates/story/story.php?storyId=113435034> • **Amber Burgett '06** is a PhD candidate at Washington University in St. Louis and was interviewed along with Andy Blaustein, who is a world expert on amphibian declines and graduate advisor for **Lindsay Michael '05** in Science Central <http://www.sciencentral.com/video/2009/05/21/teens-frogs/>

• **Michael Barker '01** successfully defended his PhD dissertation at Indiana U in April '09 • **Sarah Emery '00** was recently married ('09), and is currently an Asst. Prof. at University of Louisville. • **Rhiannon Crouse '06** and **Nate Reid '03** married on July 4, 2009. Rhiannon also graduated from Ohio University with her graduate degree in Physical Therapy. • **Michael Hunter '07** completed a masters degree in biotechnology at the Robert H. Lurie Cancer Center at Northwestern University.

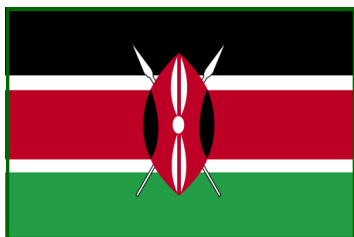
Biology Scores Big at the 2009 Awards Convocation!

The Biology Department was extraordinarily well represented at the 2009 Awards Convocation. Senior biology majors **Meredith Atwood '09**, **Kristen Hohl '09**, and **Charisse Mandimika '09** were all awarded the prestigious Presidential Medal, in recognition of their stellar academic performance and their exemplary contributions to the Denison community. Additionally, **Professor of Biology Tom Schultz** was named the recipi-

ent of this year's Charles A. Brickman Teaching Excellence Award, the highest honor bestowed upon Denison faculty. Also recognized were scholarship winners **Evan Pugh '09** (Critical Language Scholarship) and **Megan Ansbro '09** (Fulbright Research Scholarship), and Phi Beta Kappa inductees **Cecilia Murch '09** and **Sarah Perrine '09** (along with Ansbro, Atwood, and Hohl). Congratulations to our award recipients! Go Biology!



From left to right: Presidential Medalists Kristen Hohl, Meredith Atwood, and Charisse Mandimika; and Charles A. Brickman Teaching Excellence Award recipient Dr. Tom Schultz.



Today's Biology Students

Last February, Anna Petterson '10 traveled to Oloitokitok in southern Kenya to study at the Center for Wildlife Management Studies through the School for Field Studies. For three months, Anna attended classes and participated in field exercises with 31 other students from across the U.S. "It was like normal school but we were living in straw huts, called Bandas," she said. She took four courses while there—wildlife management, wildlife ecology, economic policy and a socio-cultural class that included Swahi-



li. Working independently with the Gathiga Children's Hope Home, an orphanage for infants to those in their 20s, Anna had a life changing experience unlike anything else.

"I wanted to go abroad where not many people travel. I wanted something harder."

- Anna Petterson

Fellows *cont. from page 2*

What I have really appreciated at Denison was the chance to pursue a concentration in Neuroscience within Biology. This is because I love the brain. I love the way it looks, the way it works, the way it's studied, and especially the unanswered questions it evokes. The moment in which my love affair began with neuroscience can be pinpointed to the spring of my senior year in high school when I saw

the documentary, "What the Bleep Do We Know?!" That documentary and the questions it poses about the universe, the metaphysical, quantum physics, and the brain keeps me still guessing, questioning, and wondering. From research experience both at Denison and in other environments I have honed in on my passion, which is developmental neurobiology. I want to know how the complex nervous system



of an adult is organized from the embryonic stage – each step, protein, signal, mechanism, and detail that goes into it. I guess that's what keeps me interested...I've just got to know especially when I've got the opportunity to figure it out.



Nicole Yohn

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Special Guests

During the Spring Semester '09, the Ronneberg endowment supported campus visits from two scholars of interest to biology majors. Dr. Cindi Lee Van Dover from the Duke Marine Lab spoke about deep sea mining and Dr. Philip Gingerich from the University of Michigan spoke about evolution in whales. Fall Semester '09 includes seminars on speciation in Goldenrod gall flies (Warren Abrahamson, Bucknell), conservation and invasive aquatic species (Krista Capps, Cornell), and introductions of non-native insects (**Holly Menninger '00**, Cornell).

Faculty Newsbriefs

Eric Liebl, has received a grant of \$196,312 from the National Institutes of Health for "Understanding Trio And Abl in Drosophila Axon Guidance Through Genetic Modifiers." The award was issued under the *Recovery and Reinvestment Act American of 2009*. Eric uses genetic and

biochemical analyses to better understand how individual neurons connect to each other to create a functional nervous system during early development. This work uses the fruit fly as a genetically tractable model, as many of the molecular pathways at play during fruit fly nervous system development are conserved in vertebrates, including humans. 🐛

Laura Romano was awarded a grant of more than \$200,000 from the National Institutes for Health. The grant is one of only four awarded to faculty members nationally as part of a special competition, "Enhancing Developmental Biology Re-

search at Undergraduate Institutions." It will fund equipment and travel to professional conferences and will support students working in the lab during the summer. Romano's three-year project is a comparative analysis of genes required for skeleton formation in sea urchins. 🐛 From March through May last Spring, the Biology Department hosted **Dr. S.V. Krishnamurthy**, a Fulbright Scholar from India. Krishna is chair and professor of Environmental Science at Kuvempu University in Karnataka, India. Krishna worked with **Geoff Smith** to examine the effects of agricultural chemicals on local amphibians using both laboratory and mesocosm experiments. Krishna was the first Fulbright Scholar to be hosted by Denison. 🐛

2009-2010 Faculty & Staff

Kristina Mead, received a NSF Research Opportunity Award of \$22,373 for field particle image velocimetry of mantis shrimp burrows (in collaboration with John Costello and John O. Dabiri) and a Marine Biological Laboratory research award for \$11,524 (MGF Fuortes Memorial Trust and The Laura and Arthur Colwin Summer Research fellowship Fund) for the following project: "Does shrimp 'sniffing' vary with swimspeed and population?: particle image velocimetry in Palaemonetes." 🐛 **Chris Weingart** and **Jeff Thompson** were granted tenure and promoted to Associate Professor. 🐛

