



Biological Sciences Newsletter

UIC COLLEGE OF LIBERAL ARTS & SCIENCES
Department of Biological Sciences

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Boss' Corner

Hi Everyone-

Well, it is always both exciting to be back in term, and sad to see the quiet of the summer over. This summer, one of my personal highlights was visiting Beijing, Shanghai, and Guangzhou in China for two weeks with my wife. We saw the Forbidden City, Great Wall, Shanghai Hutongs, Shanghai acrobats, and ate many tasty kinds of dumplings and baos.



To ease into the Fall semester, we had a half-day faculty retreat in September, (photo below) in which we discussed our departmental finances, faculty mentoring, future research directions to hire toward, and new teaching techniques. In that last vein, Paul Malchow and Mike Muller lead a spirited discussion on how to use iClickers effectively in classroom, incorporating techniques they learned at a workshop at the University of Wisconsin-Madison last summer. Now that we are approaching the fifth week of the term, summer seems like a distant memory as we are all fully engaged in teaching at various levels. The recent cooler weather reinforces that we are indeed in Fall.

Finally, I have to share one neat event in my life, in which I had the vicarious pleasure of seeing one of my friends win the Nobel Prize this week. When I was a graduate student in New Haven, CT, I shared an office with Dr. Elizabeth (Liz) Blackburn, who was sequencing the ends (telomeres) of a linear chromosome from a protozoan. She continued her work at UC-Berkeley and UCSF, and we now appreciate how her research on telomeres and telomerase has provided insight into ageing and cancer. For years, I have been telling everyone that she would win the Nobel Prize in Medicine and Physiology, and it finally happened. Kudos to Liz!

Wishing everyone the best,

Brian Kay, PhD
Professor & Head



Photo taken at the faculty retreat.

What Does An Archaeologist Do Anyways?

Not sure what you want to do when you graduate?

Visit the Office of Career Services.
1200 West Harrison Street
Room 3050 Student Services Building (SSB)
Chicago, Illinois 60607

Call (312) 996-2300 to schedule an appointment or consult the Office of Career Services website for drop-in advising times.

Research Library open Monday-Friday, from 8:30 a.m. to 5 p.m.



Archaeology students preparing the excavation site.

A couple of years ago, if someone asked me what archaeologists do, I probably would have said “dig for fossils” or something along those lines. Now after studying in Peru at an archaeological field school, I’ve learned that archeology is a much more broad and complex field than I originally thought. As a Pre-Med Biochemistry major, I wanted to make my study abroad experience a truly unique one, where I would be able to learn about a new field that I had never been exposed to before. After perusing the Study Abroad website, archeology caught my eye. Since I love working outdoors and doing hands-on projects, I decided to apply for a program that is co-sponsored by UIC and the Chicago Field Museum. The program was in Moquegua, Peru and the excavation site was near Cerro Mejia, a mountain the ancient Wari Civilization thrived on from 550-900 AD.

In mid June, I got on a plane to Peru and after nearly 24 hours in transit, I arrived in Moquegua, a very small village with a hot and dry environment. After taking a few days to explore the village, and settle into our apartment, the other students and I started working at the excavation site. A typical day started with waking up at 5:30am, throwing on our field clothes, lathering on SPF 90 sunscreen, eating a quick breakfast of bread and jam and jumping in the “combie,” a small Peruvian van that managed to haul 14 of us to Cerro Mejia. After a fifteen minute hike up the mountainside, the students were split up into two teams and we worked on two adjacent rooms in a Wari house. The area we were working in had never been uncovered before, so we learned about all the steps of the excavation process. I soon realized that archeologists do not simply go onto a site and start digging, but there is careful preparation before hand so that the artifacts can be preserved properly and information about where they were found can be recorded. Among the numerous steps involved in preparation were taking elevations from various positions on the site, marking off 1 meter by 1 meter grids of the rooms we excavated and drawing aerial views of all of the rocks and features of the rooms.

Afterwards, we started to dig. Excavation requires patience and attention to detail. Many of the artifacts we were looking for had endured the harsh desert environment for hundreds of years. Thus many bones, shells and pottery were extremely fragile. Some of the most interesting artifacts were obsidian arrow points. Obsidian is a semi-precious stone that can range in color from jet black to red to clear. The arrow points could have been used to hunt for game such as certain types of llama or alpaca.

On the weekends, the students and I ventured out to explore Moquegua and its surrounding cities. Although Moquegua was small, it had a large marketplace, countless restaurants and bakeries that had mouthwatering pastries. During one of our adventures, I was able to try fried “cuy,” or guinea pig—a Peruvian delicacy. A major weekend trip a few students and I took was to Arica, Chile, a colorful surfing town that had beautiful beaches and a museum that housed the Cinchurro mummies, the oldest mummies in the world. Another city that was absolutely breathtaking was Arequipa, Peru. The city center had striking architecture, cathedrals and museums. It also housed countless artisan markets that sold anything from handmade earrings to shawls made of alpaca wool.

Between the weekend excursions and the daily excavation of the site, the weeks seemed to speed up as they went along. At the end of the program, it was difficult to leave, because we were starting to dig deeper and find more interesting artifacts. Looking back, I smile to think that I once thought archaeologists simply dug up fossils. Through my experience, I learned that they plan an invaluable role in learning about past cultures and human civilizations.

Contributed by: Lisa Zhang, a biochemistry student at UIC.



View of Cerro Baul, the site where the Wari Elite lived.

Faculty Spotlight: Professor John Leonard

The list of states I lived in growing up is absurdly long. I was born in Oregon, started grade school in Montana, and after a stint in Ann Arbor, Michigan, I finished grade school in the Northern Virginia/ DC area. We then moved to Colorado where I finished high school. No, I was not from a military family, my father organized teams to produce environmental impact statements for the US Interior Dept. (BLM). So, when squeezing oil from shale rocks was considered for the Rocky Mountain Region, off we went, etc., etc. We were an outdoors-oriented family and I was fortunate to meet many interesting water rights attorneys, foresters, geologists, and wildlife biologists who worked on these projects. One of them got me hooked on birding at an early age, a habit I can't seem to shake.



In college at UC Boulder I first heard murmurs of a new field called neuroscience in their first ever course by that name. I was intrigued by the idea of using snake venom to locate and count neurotransmitter receptors, so I went to work with the person who invented the method at Cornell. I began a never-ending fascination with the hidden world of the ultrasmall. Eventually, I fell in love with electrophysiology. It was almost as if one could listen in on living nerve cells talking to one another. My first Postdoc was back in Colorado at the Medical School where I studied lamprey spinal cord electrical activity. Eventually I combined structural studies on the ultra-small neurotransmitter receptor/ion channel proteins with functional studies in the "electric cloning" laboratories at Caltech. I've continued these studies at UIC since 1988 focusing on how these neurotransmitter receptors cloned from mice change their activity after receiving stimulatory contacts from other nerve cells. Ultimately, I'd like to know if what we see in a dish can alter the behavior of an actual living mouse.

Faculty Research and Events

- Professor Howard Buhse's laboratory attended the FASEB meeting dealing with Ciliate Molecular in Saxons River Vermont where Ms. Kasia Konior presented her results of studies on *Vorticella convallari* from the platform.
- Professor Jennifer Schmidt recently developed a slideshow of a "how it's done" explanation of population genetic analysis for whale sharks. This was designed for the Discovery Tech website, as part of a series on shark science for the Discovery Channel's Shark Week. You can see the project [here](#)
- Michael Muller and Professor Paul Malchow attended the 2009 National Academies Summer Institute on Undergraduate Education in Biology this past summer at the University of Wisconsin-Madison campus. The week-long conference, sponsored by the National Academies and the Howard Hughes Medical Institute, was designed to model the scientific teaching principles on which the National Academy is founded and drew on the expertise of both participants and presenters. Current research, active learning, assessment, and diversity were woven through the week, creating a forum for participants to share ideas and develop innovative instructional materials. The goal of the Summer Institute for Undergraduate Education in Biology is to transform biology education in research universities by improving classroom education and attracting more diverse students to research. For their participation in the Summer Institute and the activities that followed, both Mike and Paul were designated as National Academies Education Fellows in the Life Sciences.
- Professor Joel Brown delivered a brilliant and inspiring lecture entitled, "Traveling the World in Search of Fear, Joy, and Adventure" on October 20th. For more information on his research please visit his websites, [Project Squirrel!](#) and his [publications page](#)
- Professor Brian Kay was selected the University of Illinois Presidential search committee.

**Interested in the
Biology
Colloquium?**

**Want to know
more?**

**Check out the BCQ
website at:**

**[http://www.uic.edu/
depts.bio/bcq/
index.htm](http://www.uic.edu/depts.bio/bcq/index.htm)**

Graduate Office:

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Faculty Making Headlines

- UPI, United Press International, is carrying a story about research conducted by Oliver Pergams, visiting assistant research professor of biological sciences. Pergams reports today in the journal *PLoS One* about a survey he conducted on museum rodent specimens, collected from around the world over the past century, in which he studied relatively fast changes in the animals' morphology. He compares this with human population density and climate change statistics for possible correlation. [Read the story](#)
- Emily Minor, assistant professor of biological sciences, is quoted in a Chicago Sun-Times article about a project to track the spread of monk parakeets in Greater Chicago. [Read the story](#)
- Two newspapers, The Oregonian and The Indianapolis Examiner, report today on a new study co-authored by Oliver Pergams, visiting assistant research professor of biological sciences, that looks at an association between a recent decline in hiking and backpacking and a drop in financial contributions to environmental and conservation groups. Read [The Oregonian article](#) and [The Indianapolis Examiner](#)



Group photo of BioS faculty and graduate students in the Molecular Biology Research Building (MBRB)

Congratulations to the Following Faculty Receiving ARRA Awards (stimulus funding)!

Simon Alford
 Boris Igic
 Brian Kay
 Yaniria Sanchez-DeLeon
 Janet Richmond
 Tian Wang
 Kate Warpeha

Congratulations to the Following Award Recipients!

- Professor Paul Malchow was the recipient of a Laura & Arthur Colwin Summer Fellowship to support his research activities at the Marine Biological Laboratories this past summer. Professor Malchow was also awarded a grant from the National Science Foundation for work entitled, "The role of extracellular H⁺ in processing visual signals." This work is structured as a collaborative endeavor between a faculty member and undergraduate students at a strictly undergraduate institution (Indiana Wesleyan University) with faculty, graduate students, and undergraduate students at UIC. It is designed to be one in which undergraduate student truly participate in the research endeavor and become actively engaged in addressing important questions in neurobiology. Undergraduate involvement will be incorporated at both campuses and will include joint research efforts, video-conference lab meetings and seminar sessions to integrate the undergraduates tightly into the research program. These collaborative studies will serve to better elucidate the role of H⁺ in synaptic processing in the retina and central nervous system, while catalyzing undergraduate student understanding of and involvement in neuroscience research.
- Professor David Featherstone is the recipient of a German Humboldt Foundation Award and he is currently on sabbatical in Germany.
- Professor Constance Jeffrey is currently on sabbatical at Harvard.

News from the Office of Special Scholarships

Opportunities to expand, explore, and build upon your invested interest in biology and the related sciences are just around the corner, and so are their respective deadlines. Campus deadlines indicate that the award has a campus-based selection process and students must apply to be nominated. Other awards are open to all applicants, and the staff in the Office of Special Scholarship Programs can assist with the application process with feedback on essays and resumes as well as general advice.

Argonne Internships

for juniors and seniors only, internships at the Argonne National Laboratory enable students with outstanding academic performance to explore their interests in math, science, engineering, or technology by introducing students to experienced mentors who can provide an extensive introduction to careers in these fields.

November 30/spring, February 1/summer deadlines http://www.dep.anl.gov/p_undergrad/spring.htm

NSEP Boren Scholarships for Study Abroad

The NSEP awards scholarships to U.S. citizens for study of world regions and languages critical to U.S. interests. Scholarships are available for study year round, and students may study for eight weeks (summer), a semester or an entire year. Award amounts range from \$2,500-\$20,000 depending on the length of study and expenses associated with the program.

December 4 campus deadline <http://borenawards.org>

Glamour Top 10 College Women

Glamour Magazine seeks out 10 female undergraduate students who have demonstrated outstanding leadership skills, a commitment to the community, and academic excellence.

January 15 final deadline <http://www.glamour.com/about/top-10-college-women>

DAAD-RISE Internships in Germany

The German American Exchange Service works with science organizations in the U.S. to bring undergraduate students to help conduct biology, chemistry, physics, earth sciences, and engineering research to Germany. Each intern works one on one with doctoral student and assists with research for one summer.

January 31 final deadline <http://www.daad.de/rise/en/>

Udall Scholarship

This scholarship seeks out individuals who have shown a commitment of various aspects of improving the environment through change and development in: policy, engineering, science, education, urban planning, business, health, justice, and economics.

February 4 campus deadline <http://www.udall.gov/>

Scholarship Association for UIC

SAUIC awards are available to student from across the disciplines who have demonstrated a solid GPA.

Mid-February final deadline <http://tigger.uic.edu/orgs/scholar/awards.htm>

National Geographic Young Explorers Grant

This grant offers opportunities to pursue research, conservation, and exploration-related projects consistent with National Geographic's existing grant programs, including: the Committee for Research & Exploration (CRE), the Expeditions Council (EC), and the Conservation Trust (CT).

Deadline ongoing <http://www.nationalgeographic.com/field/grants-Programs/young-explorers.html>

Contributed by: Fae Rabin

Scholarships!!

The Office of Special Scholarship Programs (OSSP) assists undergraduate and professional students in applying for nationally competitive and UIC scholarships.

For more information on upcoming scholarships, visit them in 2506 University Hall, or at their website: <http://www.uic.edu/depts/oa/ssp>.

Important Dates to Remember!!

November 26-27:
Thanksgiving Holiday. No classes.

December 4:
Instruction ends

December 7-11:
Final examinations

To make a gift, simply write a check payable to:

The University of Illinois at Chicago

In the Memo section write Unrestricted Biology

University of Illinois at Chicago

College of Liberal Arts and Sciences

Department of Biological Sciences (MC 066)

845 West Taylor Street Chicago, Illinois 60607

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<http://www.uic.edu/depts/bios/ungradstudy.shtml>

Make a Gift to Biology

We are committed to developing support for our Biology students. We have a number of scholarships to fund students and their research. We are focused on increasing the scholarship opportunities provided to them, and enhancing the classroom experience by acquiring up to date technology for our laboratories. Making a gift is easy and tax-deductible, and it has an immediate impact on the experience of

Keep in Touch! Alumni Questionnaire

Please send me more information on:

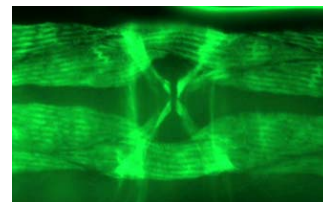
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|---|--|
| <input type="checkbox"/> Contributing to an article in the newsletter | <input type="checkbox"/> Upcoming seminars |
| <input type="checkbox"/> Department needs for private support | <input type="checkbox"/> Volunteer opportunities |
| | <input type="checkbox"/> Other please specify |

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Fluorescence micrograph of actin filaments in *C. elegans* body wall and vulval muscles. This photo was taken by students in Bios 321: Developmental Biology Lab

CUT OUT, COMPLETE AND MAIL FORM TO:

VANESSA RICKER
 DEPARTMENT OF
 BIOLOGICAL SCIENCES (MC 066)
 845 WEST TAYLOR STREET
 CHICAGO, ILLINOIS 60607-7060

-OR-

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