



BIOrhythms

Washington University Biology Department Newsletter

September 2008

*You can't
depend on
your eyes
when your
imagination is
out of focus-*

Mark Twain

Helpful Links

Biology Home Page
Biology Course Listings
Faculty Listings

*BIOrhythms is a publication of
the Washington University
Biology Department for
Undergraduate Majors*

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articles/info

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Featured in this issue:

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Staff Spotlight: David Heyse: NSLC

New Course: BIO 191 Phage Hunters

Get Involved: Clubs & Volunteer Opportunities

Calendar: Biology Events and links to event listings



Letter from the Chair

*It is my pleasure to extend a warm welcome from all of us in
the Biology Department.*

*Biology is an exciting field of study, with new research tools,
ideas, and understanding emerging constantly. We strive to
bring that new knowledge and the excitement we feel about
biology to you in classes and through opportunities to par-
ticipate in research. Our faculty is nationally and internationally recognized for
their teaching and research programs. These activities contribute new knowl-
edge every day at all levels of organism function.*

*I am pleased that you have chosen to be a part of this exciting field. A biology
degree opens the doors to a broad range of career choices. As you know, the
foundation of a successful career is a strong education. The faculty here are ded-
icated to helping you achieve your goals, through our majors advising program,
our teaching, and our research. We work as a team with the outstanding support
staff, to assist you in your educational endeavors.*

*We hope you feel a sense of pride in being a part of the Biology Department;
we want you to feel a sense of ownership as well. We appreciate and welcome
feedback or suggestions that you may have and we will work hard to make your
experience here rewarding. This newsletter is one way we hope to let you be an
active part of the department. It will be published several times during the year
to help you keep abreast of the activities going on in Biology. Please submit
information of your own that you would like to share with faculty, staff and other
students in Biology.*

*Best regards,
Professor Kathryn Miller
Chair*



BIO 500 Independent Study/Research

Purpose: to provide opportunities for students to gain experience in using the scientific method to resolve problems of scientific importance. This includes acquiring technical skills, reading and evaluating articles in the scientific literature, gaining experience in design and conduct of experiments, learning to evaluate experimental data in relation to existing knowledge, and in expanding skills at communicating results of research both orally and in writing.

New Assistant Professors of Biology in the Department can now be contacted about mentoring. They are listed below with their interests of study:

Biochemistry

Joseph Jez

Evolution, Ecology & Population Biology

Ellen Damschen

John Orrock

Neuroscience

Bruce Carlson

Yehuda Ben-Shahar

Plant Biology

Ram Dixit

Elizabeth Haswell



Faculty Spotlight: Joseph Jez, Assistant Professor of Biology

Joseph Jez moved to St. Louis five years ago to join the Donald Danforth Plant Science Center (DDP-SC) where he conducts research on ways proteins function. He currently studies plants as potential tools for environmental cleanup because of their resistance to heavy metal poisoning. He also conducts anti-parasitic drug studies with nematode worms.

While he really enjoys his research at DDPSC, his recent role as an adjunct professor encouraged him to get fully back into the academic environment he missed. He is now an Assistant Professor in the Washington University Biology Department. He believes that teaching and interacting with students provides the challenges that make his life's work more worthwhile. He will be teaching General Biochemistry II (BIO 4820/CHEM 482) in Spring 2009 as well as lecturing at some General Biochemistry I sessions this Fall.

He grew up near Philadelphia, PA, graduating from Penn State with a major in Biochemistry and a minor in English. He went on to the University of Pennsylvania to get his PhD in Biochemistry and Biophysics and to the Salk Institute in San Diego for his post-doctorate work. In his free time he enjoys rock climbing, local tourism and cooking with his wife Courtney and 2 year-old daughter Kayleigh. He also truly enjoys setting up his lab, stating that when you're lucky enough that your hobby can be your job, work is fun!



Staff Spotlight: David Heyse, Educational Bio-computing Coordinator

Whether you need help designing a web page, finding research opportunities or just finding a quiet place to study, you will always be met with a friendly smile and helpful hints from David Heyse. Originally from Bridgeport, CT, he moved to St. Louis in the early 1980's. He worked for the Kirkwood Public School system before joining Washington University's Biol-

ogy Department 15 years ago. He was hired to develop what is now known as the Natural Sciences Learning Center (NSLC) by integrating computer technology with more traditional styles of scientific lab learning. His home is still in the NSLC, Life Sciences 115, where he manages the facility, assists faculty in developing curriculum that uses technology in teaching labs and designs and manages web pages for Biology courses.

David cites working with students and taking on the constant new challenges of technology to be the most rewarding things about his job. He assists Undergrads with all things technical from understanding lab assignments to designing web pages for specific courses to helping them find research and job opportunities in their fields of study.

In his free time, he enjoys outdoor activities and travel with his wife Ann and their three sons Benjamin, Jonathan and Matthew.



GET INVOLVED: Biology Department Clubs

CO-SIGN (College Student Interest Group in Neuroscience)



CO-SIGN Executive Board, from left to right: Dr. Paul Stein, Faculty Advisor; Patricia Litkowski, Past-President; Adam Eltorai, President; Emily Guhl, Vice-President; Charis Gn, Events Coordinator; Chen Xu, Treasurer. Not in this picture: Carly Berg, Secretary.

CO-SIGN is a Washington University undergraduate group devoted to neuroscience. We organize shadowing opportunities for students interested in careers in clinical and research-oriented neurology, neurosurgery, and psychiatry. We host speakers in order to increase awareness for neurology-related topics across campus, including a MD-PhD research discussion panel and a medical student discussion panel. Our group will visit a human anatomy lab at the Washington University School of Medicine (WUMS) and take part in an Autism charitable walk. We are planning on sponsoring a medical school admissions talk by a WUMS dean. We collaborate closely with WUMS students who are members of the WUMS SIGN (Student Interest Group in Neurology) group.

We had a table at the September 3rd Activities Fair and our introductory meeting on September 8th in the Danforth University Center, Room 233. If you are interested in learning more and/or joining CO-SIGN, please join our Facebook group (search “CO-SIGN” under the Facebook Groups search bar) or email us at wahucosign@gmail.com.
—Adam Eltorai, CO-SIGN President

Biology Club

The basic goal of the Biology Club is to expose members to academic and career opportunities in biology through fun and relaxing monthly events. These events include field trips (Science Center, Botanical Garden, Zoo, etc...), presentations/discussions and our most popular event—lunch with a faculty member (about 15-20 students interact with professors on an informal basis, discussing research, classes, and science in general.) Some past lunches included Dr. Elgin, Dr. Quatrano, and Dr. Templeton. Other ideas have been tossed around such as Biology Movie Nights and field trips to Bio-tech companies. Another goal for the Biology Club, related to the club’s funding through an HHMI grant, is to increase the participation of women and under-represented minorities in the Biological Sciences. The participation in our first meeting this semester was 2/3 female, a good indication that this goal will be met.

This year, we decided to operate the club by a committee of officers. The Biology Club Officers for 2008-2009 are Scott Fabricant, Dan Feng, and Sophia Li. The club does not have set meeting times; email wubioclub@gmail.com to be on a contact list for meetings and events.
—Wil Cruz, Faculty Advisor

New Course in Biology: “Phage Hunters” BIO 191

A research-based laboratory class for freshmen. Students will join a national experiment organized by HHMI, with the goal of isolating and characterizing bacteriophage viruses found in the soil outside of Rebstock Hall.

Laboratory work will include isolation and purification of your own phage, DNA isolation and restriction mapping, and EM characterization of your phage. One WU phage will be selected for genome sequencing over winter break.

Prerequisites: High school courses in biology, chemistry and physics, at the AP or International Baccalaureate level; permission of the instructor. Limited to 20 students. One hour lecture, one hour discussion, and 3 hrs lab per week.



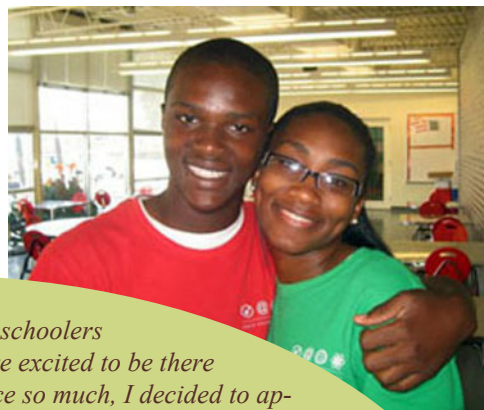
Volunteer for Science Outreach

Mission Statement: “Science Outreach connects the resources of Washington University to K-12 teachers, students, and families. Our mission is to improve learning in math and science through hands-on, investigative teaching methods. We place priority on working with neighboring school districts in underserved communities. Many of our programs are national models for teacher professional development, and are supported by grants and private donations.”

Alexis Scott began volunteering with the Science Outreach program during the Bernard Harris Saturday Visits where she acted as a teacher’s assistant, asking pre-teens questions to guide their exploration of science topics.

Want to get involved? Go to <http://www.so.wustl.edu/index.html>

Photo: YES teen Kris Lane with Alexis Scott



Working with the middle-schoolers was a joy because most of them were excited to be there and eager to learn. I enjoyed the experience so much, I decided to apply for the Community Science and Teaching Fellowship through the St. Louis Science Center.

Ten weeks of my summer was spent with urban, at-risk teenagers from the St. Louis area participating in the Youth Exploring Science Program (YES), a work training program that uses science to empower youth.

Science and math are considered “tough” subjects. If students understand it well enough to teach it to younger children, they feel empowered to approach any subject and area in school and life. My summer was spent teaching science activities to teenagers and supervising them while they taught the exercises to younger children and adults with special needs. It was one of the most rewarding experiences I’ve had yet. I still keep in touch with many of the teens. The YES program also operates during the school year on Saturdays. I will be volunteering every couple of Saturdays to work with my teens. — Alexis Scott



Do You Have...

An announcement you’d like to make?

An interesting story or fun fact you’d like to share?

A professor or course you’d like to suggest for a spotlight?

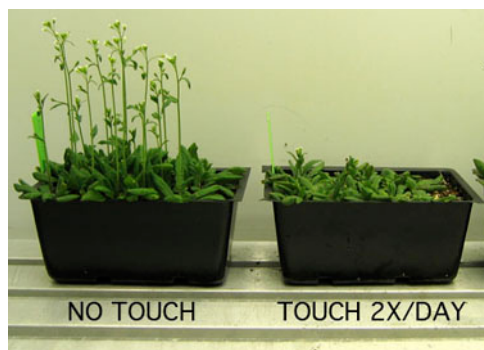
We want your input! Send ideas and information to:
gerrity@biology2.wustl.edu

Biology Department Researchers Study Touch Perception in Plants

Picture yourself hiking through the woods or walking across a lawn. Now ask yourself: do the bushes know that someone is brushing past them? Does the grass know that it is being crushed underfoot? Of course, plants don’t think thoughts—but they do respond to being touched in a number of ways. One example is the Venus flytrap, which snaps shut on a fly, thereby providing itself with a good meal. Another example is a pea vine, growing up the side of a fence—the vine has to know when it’s touching the fence so that it can change its direction of growth, and continue to wind around the support.

Researchers in the Haswell lab are using genetics to find out exactly how plants sense touch. They are using the model plant *Arabidopsis thaliana*, which normally responds to being touched by arresting its growth (see picture below).

By finding plants that don’t respond to touch in this way, and instead grow as tall as untouched plants (touch-insensitive mutants), we hope to identify the genes that *Arabidopsis* needs to sense and respond to touch. This research is funded by the Monsanto/Washington University Plant Science Program. That should give you something to think about the next time you touch a plant on the hiking trail or run across Francis Field!



—Professor Elizabeth Haswell

Biology Department Calendar



Links to General Calendars and Regular Events:

Washington University Record Calendar: <http://record.wustl.edu/calendar>

Biology Department Seminars, Mondays, 4:00pm, Rebstock 322, check the website for topics/schedule: <http://www.biology.wustl.edu/seminars/nextsemester.html>

Evolution, Ecology, & Population Biology Seminars, Thursdays, 4:00pm, Rebstock 322, check the website for topics/schedule: <http://www.biology.wustl.edu/seminars/evpop.html>

Bioforum, alternating Fridays, 4:00pm, McDonnell 361, check the website for topics/schedule: <http://www.biology.wustl.edu/seminars/biologyforum.html>

Plant Lunches: most Tuesdays at noon (1st Tuesday of month @ DDSPC, others @ McDonnell 212)
Contact Professors Tuan-hua David Ho or Mark Running for topics/schedule.

Donald Danforth Plant Science Center (DDSPC), Weekly Seminar Series—Wednesdays, 4:00pm, AT&T Auditorium, check the website for topics: <http://www.danforthcenter.org/opportunities/seminars.asp>

Division of Biology and Biomedical Sciences (DBBS), all lectures and seminars: <http://dbbs.wustl.edu/dbbs/website.nsf/SDN>

September 2008

- 16th Biochemistry & Molecular Biophysics Biophysical Evenings Seminar. "K Channel Molecular Biophysics." Colin Nichols, prof. of cell biology. 5:30pm, Cori Auditorium, 4565 McKinley Ave. 362-4152.
- 17th Physics Colloquium. "Physical Modeling in Biology: Gene Regulation to Plant Development." Eric Mjolsness, computer science-systems, U. of Calif., Irvine. 4:00pm (3:30 p.m. coffee, Compton Hall, Rm. 245.) Crow Hall, Rm. 204. 935-6276.
- 30th Special Seminar by Dr. Robert Jansen from University of Texas, 10:00 am in Rebstock 322, Small reception following his presentation in Rebstock 321.

October 2008

- 1st 1st-3rd, Annual Fall Symposium of Danforth Plant Science Center "Plants for the Future" www.danforthcenter.org
- 17th Friday Fall Break (no classes)
Plant Biology Retreat, Shaw Nature Reserve, all day, contact Barbara Kunkel or your lab PI if you want to attend
- 25th Undergraduate Research Symposium 8:30am to 4pm, Danforth University Center

