

BIOrhythms

Washington University Biology Department Newsletter

April 2012

*"If opportunity
doesn't knock,
build a door."*

—Milton Berle

Helpful Links

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

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Faculty Spotlight: David Queller, Spencer T. Olin Professor of Biology



Dr. David Queller spent most of his childhood in Southern California and his high school and college years in Champaign, Illinois. Queller's interest in evolutionary biology stems from a fascination with animals, particularly birds, an interest he shared with his older brother while growing up. His interest in animals eventually led to a PhD in Biological Sciences. He received his undergraduate degree with a focus on the history and philosophy of science from the University of Illinois in Champaign, and attended graduate school at University of Michigan in Ann Arbor. He did his postdoctoral study for 1 year at the University of Sussex and then went on to Rice University in Houston, Texas as a visiting professor which eventually became a permanent position. He was on the faculty of Rice from 1989 to 2011, and was Harry C. and Olga

K. Wiess Professor in Natural Sciences in the Department of Ecology and Evolutionary Biology. He met his wife and lifetime collaborator Joan Strassmann at Rice. Their work on the study of social evolution has been linked for over three decades, the better part of their careers.

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SUMMER JOBS

WU CAREER CENTER

Locations:

Danforth University Center, Suite 110 with satellite offices in Lopata Hall, Brauer Hall and Steinberg Hall

Main Office Hours in the Danforth University Center: Mon-Fri: 8:30-5:00

Contact Us

Phone: 314.935.5930

Fax: 314.935.5905

Email: careers@wustl.edu

Web: careercenter.wustl.edu

Upcoming Career Center Events

WUSTL Summer Parties - Join us for a summer party! Network with past and present students and meet others that share in the success of Washington University in St. Louis.

St. Louis – Wednesday, June 6 from 6:00 - 8:00 p.m.

Chicago – Thursday, June 7 from 6:00 - 8:00 p.m.

San Francisco – Thursday, June 21 from 6:00 - 8:00 p.m.

New York – Wednesday, June 27 from 7:00 - 9:00 p.m.

Washington, D.C. – Thursday, June 28 from 6:00 - 8:00 p.m.

Find out more at careercenter.wustl.edu/party. Sponsored by the Alumni Association and Career Center.

*****SEE NEXT PAGE FOR INFORMATION ON SUMMER JOBS**

New Course Spotlight: Bio 4520: Protein Function in Model Cellular Systems



Physcomitrella patens

The goal of this 3-credit laboratory course is to train students in the scientific method. Throughout this course, students will be developing a new model system for studying peroxisomal biogenesis disorders, including Infantile Refsum disease and Zellweger syndrome, which result in a spectrum of disease symptoms. Students will study a protein involved in peroxisome function and, working in small groups, use bioinformatics to identify their protein in a number of species, then use this information to hypothesize

which residues of the protein are important for its function. Over the course of the semester, students will test their hypotheses to recreate the disease symptoms in two model systems for studying cellular function—the unicellular eukaryote *Saccharomyces cerevisiae* and the multicellular eukaryote *Physcomitrella patens*. The weekly lecture gives students the background necessary to understand and perform their experiments, including information on a variety of bioinformatics tools, phylogeny, protein structure, molecular techniques, cell biology, and microscopy. In addition, students use primary literature to understand the role their assigned protein plays in their cellular process.

Prereq: Bio 2960 and Bio 2970. —*Lucia Strader*



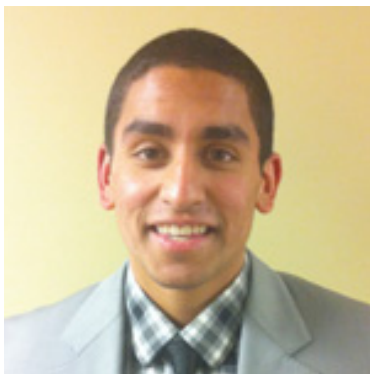
Faculty Spotlight cont'd— David Queller, now Spencer T. Olin Professor of Biology, says that joining the Biology Department at Wash U in summer 2011 felt like coming home since he spent so much time in the Midwest in his teens and early twenties. He also had some family roots in St. Louis since his father was born here. He will be teaching a graduate seminar for the Evolution, Ecology & Population Biology (ECPB) program in fall 2012. He also looks forward to teaching evolutionary biology to undergrads in the future. In addition to teaching, he is an undergraduate Environmental Biology major advisor.

The Strassmann/Queller lab's focus is social evolution, i.e. the biological basis for concepts such as altruism and cooperation. The lab has used social wasps and now the social amoeba *Dictyostelium discoideum* as models to explore how traits are selected to facilitate this cooperation. Strassmann and Queller studied social wasps in the tropics, Venezuela and Tuscany over the years and discovered many things about social evolution, but ultimately wanted a microbial system that gets at the gene level of behavior. Social amoebae prey on bacteria. When individuals are starved, they aggregate into a multicellular fruiting body. Eventually, 20% of the body dies so that the fruit can be dispersed. In other words, some individuals voluntarily sacrifice themselves to ensure the future of the organism. Social amoebae serve as better models than wasps because the genes can be manipulated to gather more information. Strassmann and Queller study the synergistic advantages of cooperation and this carries over into their professional collaborations with other scientists who bring different skills and talents to the table. See the lab's website for the latest research questions and results: <http://strassmannandquellerlab.wordpress.com/>. The Strassmann/Queller lab provides opportunities for undergrads for credit or for pay. You can contact Joan Strassmann or David Queller to see what's available this summer. —*Erin Gerrity*

Undergraduate Student Announcements

Biology Undergraduate Honors Theses: Some Senior Honors Theses from 2011+ are now available online at openscholarship.wustl.edu/undergrad_honors/ for WUSTL users only. Paper copies of some Senior Honors Theses, 2000-2010, also continue to be available in the library. —*Ruth Lewis, Olin Library*

Biology Undergraduate's Work Published in *Science*: first-year grad student Devin Dobias had a paper in *Science* recently about work he did as an undergrad: Justin R. Meyer, Devin T. Dobias, Joshua S. Weitz, Jeffrey E. Barrick, Ryan T. Quick, and Richard E. Lenski, "Repeatability and Contingency in the Evolution of a Key Innovation in Phage Lambda", *Science* 27 335: 428-432. —*Submitted by David Queller*



Neuroscience Track Major Tej Azad

Named Newman Civic Fellow: Tej Azad, a junior in Arts & Sciences at Washington University in St. Louis, was among 162 students from across the country named a Newman Civic Fellow for 2012 by Campus Compact.

The Newman Civic Fellows Awards recognize inspiring college student leaders who have demonstrated an investment in finding solutions for challenges facing communities throughout the country and the world.

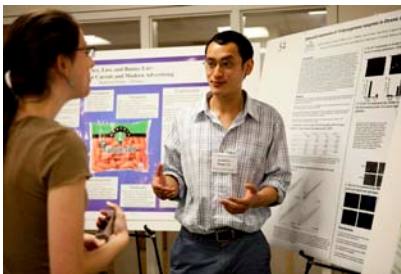
"Azad is an outstanding example of a civic leader," says Chancellor Mark S. Wrighton, who nominated him for the award.

"He analyzed the needs of the community, was committed to raising awareness of those needs through the power of education and inspired others to join him in seeking solutions. I believe he exemplifies all that this prestigious honor represents."

Azad was selected as a Newman Civic Fellow for his dedication to addressing health disparities through education. As a leader for WashU H.O.P.E. (HIV/AIDS Outreach, Prevention, and Education), he strives to address the stigma surrounding HIV. —*Read more in The Record*

Don't Miss the Spring 2012 Undergraduate Research Symposium!

Twice yearly the Office of Undergraduate Research sponsors the Undergraduate Research Symposium. We encourage students in all academic departments, programs and schools to present their original research. Students interested in participating must complete the online registration form, provide an abstract summarizing their research, and produce a poster to present at the symposium. In addition to poster sessions, the symposium program includes a keynote address, selected student talks, performances and demonstrations of projects. The Spring 2012 Undergraduate Research Symposium will be held on Saturday, April 28, from noon to 4 p.m. in Lab Sciences.



Plans for the Summer or Post-graduation

It's not too late to find a meaningful summer experience or an opportunity for post-graduation. CAREERlink has over 1000 opportunities posted. Below are a few that might interest Biology students.

Peace Corps - Corps Volunteer (Post-Grad)

Gap Medics - Pre-Health positions in Tanzania (Internship)

Envision LLC - Biologist - Application Maintenance & Support + Others (Post-Grad)

HealthCorps - HealthCorps Coordinator 2012-2014 (Post-Grad)

D.E. Shaw Research, LLC - Early Career Scientists and Engineers: Computational Biochemistry Research Group (Post-Grad and Internship)

Washington University School of Medicine - Research Technician II (Post-Grad)

Yale University - Research Assistant I (Post-Grad)



Biology Department Calendar

Links to General Calendars and Regular Events:



Washington University Record Calendar: <http://news.wustl.edu/Pages/Calendar.aspx>

Biology Department Seminars, Mondays, 4:00pm, Rebstock 322, check the website for topics/schedule:

<http://wubio.wustl.edu/events?tid=8>

Evolution, Ecology, & Population Biology Seminars, Thursdays, 4:00pm, Rebstock 322, check the website for topics/schedule: <http://wubio.wustl.edu/events?tid=3>

History & Philosophy of Science Seminar Series: <http://wubio.wustl.edu/events?tid=12>

Plant Lunches: most Tuesdays at noon (1st Tuesday of month @ DDSPC, others @ McDonnell 212):

<http://wubio.wustl.edu/events?tid=10>

Donald Danforth Plant Science Center (DDPSC), Weekly Seminar Series—Wednesdays, 3:45pm, AT&T Auditorium, check the website for topics: http://www.danforthcenter.org/the_center/events/seminars_symposia/

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

April 2012

28th

Undergraduate Research Symposium

May 2012

3rd

Final Exams Begin

17th

Arts & Sciences Recognition Ceremony
Biology Major Graduates Celebration

18th

COMMENCEMENT

21st

First Summer Session Begins

June 2012

8th

Summer Session I Ends

11th

Summer Sessions II and III Begin

