

# CUR Biology

Biology Division Newsletter

Volume 5, Issue 1 December 18, 2014

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## Upcoming Meetings:

### Plant & Animal Genome (PAG XXIII)

January 10-14, 2015  
San Diego

### GSA: Strategic Conference of Zebrafish Investigators

January 17-25, 2015  
Pacific Grove, CA

### GSA: Drosophila Research Conference

March 4-8, 2015 Chicago

### Benthic Ecology Meeting

March 4-8, 2015  
Quebec City

### GSA: Fungal Genetics Conference

March 17-22, 2015  
Pacific Grove, CA

### American Association of Cancer Research

April 18-22, 2015  
Philadelphia

### 2015 Penn State Plant Biology Symposium

"Plant Stress-Omics in a Changing Climate" May 13-19, 2015  
College Station

## Featured Article

### Summer Ecology Course in the Rocky Mountains

In summer 2014 six students, including five from Roger Williams University and one from the University of Massachusetts, Amherst, spent three weeks conducting field work in the Rocky Mountains. Students learned about different communities and ecosystems in the Beartooth Mountains and the Yellowstone region.

We were based out of the Yellowstone-Bighorn Research Association field camp at an elevation of 6500 feet. There are many different communities within a close range of the field camp. We started the class with a short day hike along the Lake Fork of Rock Creek to study vegetation and acclimate to the altitude. There we were able to study sagebrush communities, lodgepole pine and white pine forests, and alpine tundra communities. The students studied community structure using a variety of field techniques as well as measuring age structures of the forest communities. Students also learned about water potential and soil ecology.

After introductory sessions students developed field research projects, selecting from topics that included the role of fire and secondary succession; the white pine bark beetle and climate change in the Beartooth mountains; and high altitude stress effects on the Krummholz.

Next, while working together as

teams, the students collected data for their projects. Finally, the teams developed posters for presentations. Posters were peer reviewed by the class members.

Other activities included a trip to the Museum of the Rockies in Bozeman, Montana, a prairie dog town, and the Natural History Museum in Cody, Wyoming. A highlight of the trip was a two-day excursion into Yellowstone National Park. While there we met with a forest ecologist who talked about the role of fire in the Yellowstone ecosystem. It was interesting to learn about the politics of fire in the National Park. We visited areas from the 1988 fire and saw the recovery and regeneration of Lodgepole pine. We also visited the geyser basin and we were able to watch Old Faithful "do its thing." We observed numerous species of animals and for students from the east coast it was an eye-opening experience.

During the trip we were able to go white water rafting on the Stillwater River. Another day was spent horseback riding in the Red Lodge, Montana area. We also visited the Heart Mountain War Relocation Center where Japanese-Americans were sent during World War II. Most evenings were spent in the classroom, but students also had time to catch a movie at the old time "Roman Theater" in town. We also watched memorable sunsets from the deck of the main lodge.

**American Society for Microbiology** May 30- June 2, 2015, New Orleans

**Society for the Study of Reproduction**  
June 18-22, 2015  
San Juan, PR

**GSA: 20<sup>th</sup> International C. elegans Conference**  
June 24-28, 2015  
Los Angeles

**26<sup>th</sup> International Conference on Arabidopsis Research**  
July 5-9, 2015  
Paris

**American Society for Plant Biology**, July 26-30, 2015, Minneapolis

**Ecological Society of America** August 9-14, 2015, Baltimore

...So many meetings, so little travel budget! If we left off your favorite meeting let us know.

## CUR BIOLOGY DIVISION GOVERNANCE

### **Biology Chair/Biology Executive Board Representative:**

Dr. Michael A. Palladino  
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### **Biology Secretary:**

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Unfortunately, fire restrictions prevented us from having an outdoor fire. But we used the fireplace in the lodge and made the traditional S'mores. The three week class culminated with a hike and BBQ steak dinner.

This course will be offered again in 2015 and qualified students from any university may apply to enroll. It will run July 26<sup>th</sup> – Aug 15<sup>th</sup>. Students will earn three hours in field biology. The cost of the course will cover registration, room and board, and field trips. For more information please contact the author.

*-Submitted by Lonnie Guralnick*  
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### **Why Join the Council on Undergraduate Research?**

Posters on the Hill  
Mentoring  
Institutes and Workshops,  
Such as:  
○ Proposal Writing  
○ Beginning research programs at PUIs  
CUR Dialogues  
Advocacy  
Professional Development  
Networking Opportunities  
Program Reviewers  
Recognition/Awards

## BIOLOGY DIVISION NEWS

### **Highlights from the 2014 Annual Business Meeting**

The annual business meeting took place at the Renaissance Washington Hotel, June 26-28, 2014. The Biology Division welcomed three new councilors in attendance this year: **Terry Conley, Christine Cutucache,** and **Gretchen Edwards-Gilbert**, as well as first time attendee **Christopher Korey**. While we discussed and contributed towards many of the broader CUR initiatives, we were also able to develop and plan for Biology Division initiatives that will directly impact our division members.

The **Advocacy Committee** is continuing to work to find ways to reach out to post-docs who are interested in undergraduate teaching careers. One approach discussed is to organize workshops at national disciplinary meetings at which interested post-docs could learn about careers in PUIs.

The **Student Travel Awards Committee** is transitioning leadership and is training the new chairs and working toward awarding eight travel grants this year (four per semester).

The **Mentoring Committee** is working toward broadening participation of division members in this program by reaching out to division chairs at member institutions and considering offering workshops.

The **Mentor Awards Committee** plans to revise their evaluation criteria to take into account institutional context.  
*-Submitted by Biology Division Secretary Karen Resendes*



## **CUR DIALOGUES 2015**

### **"Climbing the Ladder to Funding Success: Diverse Sources, Diverse Pathways" Feb. 19-21, 2015**

Renaissance Arlington  
Capital View Hotel  
Come join faculty, staff, and administrators from academic institutions across the U.S., and hear from federal agency representatives and other funders, network with other professionals, and perhaps discover a new research partner. Highlights for CUR 2015 include more than 40 presenters from agencies such as NSF, NIH, Department of Education, Department of Energy, HHMI, NEA, and NEH. Keynote speakers include Susan Singer (Division Director) and Lee Zia (Deputy Director) of the National Science Foundation's Division of Undergraduate Education, and Scott Jaschik, co-Founder and Editor, *Inside Higher Ed*.

**Early Registration  
CLOSED**

**Final Registration  
Deadline: Friday,  
Feb. 6, 2015**

**The newsletter editors need your help! If you have an interesting topic for a *Featured Article*, wish to network with other members, or have announcements, please contact us.**

## **WANTED!**

### **Ideas for Introductory Laboratories in Cell Biology and Genetics Courses**

Can anyone offer ideas for new guided inquiry modules for introductory laboratories in cell biology and genetics?

We currently have modules addressing the effect of pasteurization on vitamin C levels in freshly squeezed orange juice, osmosis, enzyme activity and photosynthesis. In each module, students develop a question, hypothesis, and experimental protocol to test their hypothesis. Their selection of questions and protocol are guided by the resources available.

For example, in the osmosis module the laboratory manual explains how to measure the rate of osmosis from distilled water into a dialysis bag containing a sugar solution. The students know that they have access to a variety of temperature control water baths and sugar solutions varying in both concentration and the sugar molecular weight. Thus, they are "guided" to pose questions about the effect of temperature, concentration gradient or solute molecular weight.

Similarly, in the enzyme lab, they are guided to

question the effect of temperature, pH, salt concentration, or substrate concentration. Each experiment yields quantitative results.

Each module is four weeks long, but the experiment itself is carried out in one 3 hour laboratory period. The first week of each module is dedicated to planning, the second to the experiment, the third to oral reports and discussion, and a written report is submitted in the fourth week. The modules overlap such that three modules are completed in 8 weeks.

We would like to add modules so that we can switch out which modules we use each semester. The key to a good module is that the students can be guided to 3-4 possible questions, they can be guided to a protocol that is appropriate for freshman, and the results should be quantitative. Ideally, we would like to add a module that would make use of light microscopes.

If anyone is currently using a laboratory exercise that could be adapted to our model, or even if you simply have an idea, I would love to hear from you!

Thanks in advance for any help you can offer. I can be reached at:

[lwimmers@towson.edu](mailto:lwimmers@towson.edu).

**Larry Wimmers**

**NCUR 2015: National Conference on Undergraduate Research, April 16-18, 2015. [http://www.cur.org/ncur\\_2015/](http://www.cur.org/ncur_2015/)**