



BIOLOGY NEWS

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Message from the Biology Division Chair



*Karen Resendes
at the "Bean"
during the ASBMB
conference in
Chicago*

Welcome to the spring/summer 2017 issue of the CUR Biology Division newsletter! As the new division chair, it's my pleasure to share with you the great work that the councilors and members of the CUR Biology Division have been up to so far this year as organized by our amazing editors.

With each new issue, I will be updating you on the goals and objectives of CUR Biology. Today I'd like to use this space to introduce myself. I am a six-year CUR councilor and previously served as both division secretary and coordinator of the division's student travel awards. I represent Westminster College, a small liberal arts institution in New Wilmington, PA, where I am an associate professor of biology and co-director of the Drinko Center for Undergraduate Research. As with many of us, my passion for undergraduate research began in my years as a student at the College of William and Mary. There I had two great mentors who developed my enthusiasm for both research

About CUR's Biology Division

The Biology Division of the Council on Undergraduate Research provides networking opportunities, activities, and resources to assist biology administrators, faculty members, students, practitioners, and others in advancing undergraduate research.

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and teaching, which I carried through with me in my time as a graduate student in cell and molecular biology at Brown and as a teaching/research postdoc at UCSD and SDSU where I worked with many undergraduates along the way. In my time as CUR Biology Division chair, it is my goal to assess and broaden the programs that have been the pillars of the division, mentor awards, student travel awards, and advocacy, in particular promoting the benefits of undergraduate research to new faculty and postdocs. I look forward to representing the biologists of CUR and keeping you abreast of the great work and opportunities this organization can provide for you. •

Attend the Forensic Science Preconference Workshop Track, NCUR 2018

Gregory Wilson
(University of Central Oklahoma)

The University of Central Oklahoma, in collaboration with the Council on Undergraduate Research, will host the 32nd annual National Conference on Undergraduate Research (NCUR) on April 4–7, 2018. The conference is the premier forum showcasing undergraduate student research and innovation. New to NCUR 2018 are five interdisciplinary preconference workshops for hands-on learning and sharing of career information. One interdisciplinary track will focus on forensic science. Sessions will provide students with the fundamental understanding of the methods that are used within the fields of digital impression and biological forensic science. Each session will provide an overview of the discipline and then allow for hands-on instruction.

To attend, students should have an accepted abstract to present at NCUR 2018 and select the Forensic Science Preconference Workshop Track when registering. The preconference workshop is offered at no additional cost, and student attendees will be able to perform the following forensic tasks: lift fingerprints, analyze a DNA profile, recover deleted files, compare cartridge casings, analyze blood, and compare tire impressions.

The Forensic Science Preconference Workshop Track begins on April 4 at 1 p.m. Registration is limited to the first 160 students. Hope your students will plan to attend. For further details on NCUR 2018, visit the [NCUR 2018 webpage](#). •

Roger Williams University Professor to Initiate Pilot Program of International Research for Students in South Africa

Lonnie Guralnick (Roger Williams University) is finishing a sabbatical at Rhodes University where he has continued his research with *Portulacaria afra* (Spekboom), a plant endemic to South Africa. *P. afra* is well adapted to regions with limited and sporadic rainfall—specifically via a photosynthetic pathway termed facultative CAM. Spekboom has outstanding growth rates given the arid environment in which it dominates. Guralnick has published a paper on *P. afra*, “Crassulacean Acid Metabolism as a Continuous Trait: Variability in the Contribution of Crassulacean Acid Metabolism (CAM) in Populations of *Portulacaria afra*” (in *Heliyon* 3 [2017]: e00293). He has been performing

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Student Travel Award Recipients (Spring 2017)

Mikayla Morrow

Mentor: Joshua Corrette Bennett
Westminster College

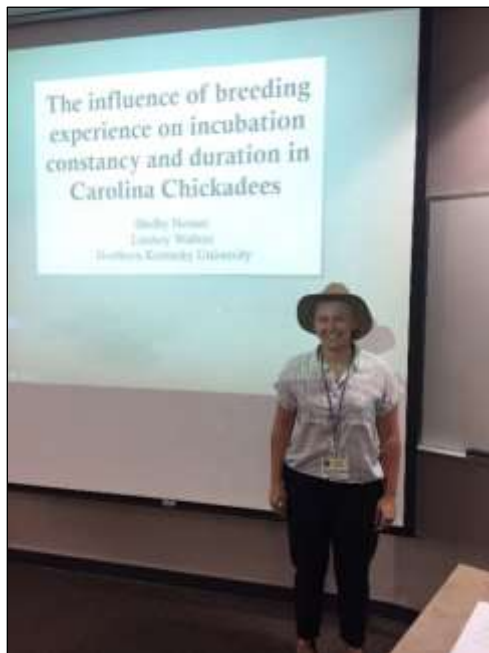
“Suppression of Biofilm Formation in *Staphylococcus aureus* by Targeting Staphylococcal Accessory Regulator X Expression.”

American Society of Biochemistry and Molecular Biology, February 2017

Shelby Nemec

Mentor: Lindsey A Walters
Northern Kentucky University

“The Influence of Breeding Experience on the Incubation Behavior of Carolina Chickadees.”
Wilson Ornithological Society Annual Meeting, March 2017



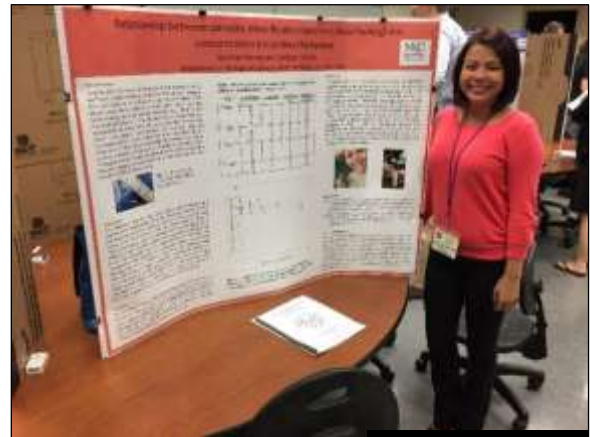
Shelby Nemec

Spyncer Mones

Mentor: Lindsey A Walters
Northern Kentucky University

“Relationship between Parasitic Blow Fly Abundance and Blood Hemoglobin Concentration in Carolina Chickadees.”

Wilson Ornithological Society Annual Meeting, March 2017



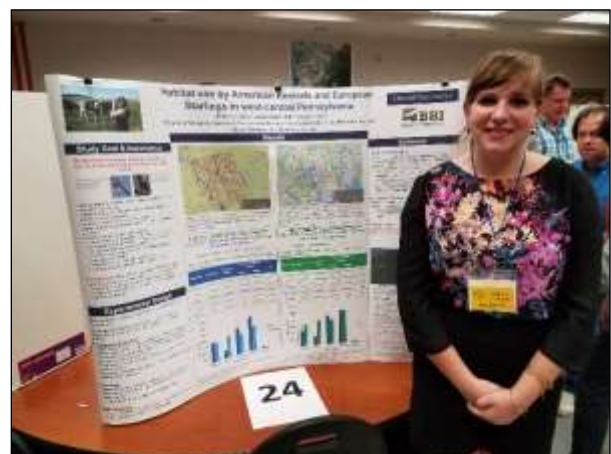
Spyncer Mones

Rebecca Zdilla

Mentor: Kerri Cornell Duerr
Westminster College

“Habitat-Use of American Kestrels and European Starlings in West-Central Pennsylvania.”

Wilson Ornithological Society Annual Meeting, March 2017



Rebecca Zdilla

South Africa

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Portulacaria afra (Spekboom) growing in the Plutovale region near Grahamstown, South Africa.

long-term ecophysiological research on Spekboom, currently including a comparison of macroclimate and microclimate influences on the photosynthetic pathways used by this species. In addition, he is studying the reasons for Spekboom's ability to sequester carbon at far higher rates compared to species growing in wetter environments. A pilot program will be started in January 2017 for students to participate in ongoing research projects in South Africa. Students will be analyzing the physiological attributes of Spekboom for its high water use efficiency. In addition, they will be trying to understand the genetics and the phenotypic variability of *P. afra*, looking to determine if there are better adapted ecotypes for restoration. Students will be able to participate in ongoing work and initiate a restoration project. They will have the opportunity to observe firsthand the tremendous biodiversity found in the Eastern Cape region, including study of areas from the Karoo to the Spekboom Thicket. Observations will also include the interactions of wildlife within the different

diversity zones. Students will benefit from working in an international setting and learn about the context of environmental and sociological issues in South Africa. •

Collaboration through Professional Development with the Community College Undergraduate Research Initiative (CCURI)

Diana Spencer (Tulsa Community College)

The American Association of Community Colleges reports that an estimated 12.3 million students are enrolled at community and technical colleges. This number represents 45 percent of all U.S. undergraduates and 36 percent of first-generation students to attend college. The number also represents 62 percent of Native American, 57 percent of Hispanic, and 52 percent of black undergraduates in the nation (see AACC's [fact sheet](#)). Much effort and energy is given to the high-impact educational practice of undergraduate research in an effort to focus on innovation and student success.

On May 21–24, 2017, nearly 40 faculty from New York to Washington state gathered at Tulsa Community College to participate in five threads of potential research options for students in the first two years of college. Faculty members were able to study potential research projects in sessions of three hours each. Topics included soil microbial ecology (3 sessions), CRISPR/Cas9 gene editing (3 sessions), genome solver (2 sessions), DNA barcoding (3 sessions), and fresh water sponges (1 session).

The faculty members were hosted by the National Science Foundation CCURI Grant that uses an inquiry-based teaching model

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CCURI

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to expose students to real work science. [CCURI](#) provides fall and spring colloquia and poster sessions for students presenting recent research work. CCURI facilitates the networking of community college students and faculty that includes 44 partner institutions, affiliate institutions, and collaborators. The partner institutions receive funding from the NSF IUSE Award Abstract #1524353 CCURI: Creating a Culture of Change. The grant works to develop curricular embedded units, summer research experiences, courses, or program undergraduate research experiences. This Division of Undergraduate Education funds the project with James Hewlett (Finger Lakes Community College) as principal investigator. Affiliate institutions have joined the CCURI network and have access to the experiences through institutional funding. CCURI collaborates closely with CUR. All of the partnerships allow faculty to prepare and disseminate best practices regarding undergraduate research.

Producing stellar, multiday laboratory investigations involves the collaboration of many. Champions of the project must actively pursue the realization of the project from a variety of angles. Travel and registration with preparation of protocols and laboratories are a must. A successful project requires administrative assistance with paperwork, lab coordination for ordering materials, and outreach efforts with marketing communications. It takes a troop of caring professionals to see the project to fruition. Success in the classroom with completion and retention of students is a worthy goal for all, and networking through professional development is an appropriate avenue. •

Posters on the Hill Awardees and Honorable Mentions, Biology (Spring 2017)

Awardees

Anuranita Gupta, Drexel University
Katherine N. Burgos,
Eastern CT State University
Jessica L. Moore, University of Maine
Liesl Grace Strand,
University of Washington
Natalie M Aguirre/Marissa Elena
Ochoa, Pepperdine University
Nikhil Gangasani, University of Georgia
Katie Lynn Rubitschung,
Minnesota State University Mankato
Monica Brooke Johnson/Brooke
Elizabeth Jones/Taylor Lee,
Henderson State University
Heather Mead,
Northern Arizona University
Britton A. Strickland, University of
Southern Mississippi
Alison Jeffrey, University of
New Hampshire
Haley Beth Turner,
University of West Alabama

Honorable Mentions

Kenny Nguyen, Purdue University
Main Campus
Lillian Jessica Horin, Pitzer College
Christopher Li, Harvard University
Allison Intorre,
University of Nebraska at Omaha
Leah Rose/Krevans Brieger,
St. Olaf College
Dolly Sanjinez, Utah Valley University
Caitlin Stapp, California State
University–Fullerton
Megan C. Wurtz,
Eastern Michigan University

Departmental and Undergraduate Research Program Review Services

The CUR Departmental and Program Review Committee offers review services to academic departments or specific administrative units such as undergraduate research program offices. CUR provides these services by calling upon academic professionals who share CUR's vision and goals, are experienced in departmental program reviews and/or disciplinary accreditation processes, and who have thought deeply about undergraduate education quality. CUR's faculty and administrative reviewers are experienced in visiting academic institutions where they listen to you and provide the help you need.

The reviewers have a wide range of expertise. They can assist you in:

- evaluating your curriculum, program, or department,
- assessing or evaluating your undergraduate research program on various types of campuses,
- preparing for a departmental accreditation visit, and
- transforming or rejuvenating a department.

Benefits of external program reviews include:

- impartial third-party credibility,
- a review process that is cost effective,
- sensitivity to issues relevant to undergraduate curricula and culture,
- experienced reviewers whom you select to meet the needs of your specific departmental program

Reviews

Reviewers can come to your campus to perform a traditional departmental review or a review of a particular program and provide a written report to you or your administration. Reviewers can also provide you with expertise in any of the areas listed above.

The Process: We Work with You

Because the types of reviews can vary tremendously, those interested in having an external review should submit their request to programreview@cur.org. The Program Review Committee will work with you to develop a work plan. •

Upcoming Events

Fall 2017

October 22–23, 2017, Alexandria, VA.
Research Experiences for Undergraduates Symposium. This conference will feature presentations by students from REU programs in all disciplines. The nomination deadline is Thursday, August 31, 2017.

Beginning a Research Program in the Natural Sciences at a Predominantly Undergraduate Institution Institute. The goal of the institute is to give individual, pretenured faculty members the opportunity to learn from and discuss with experienced faculty how to establish and manage a research program with undergraduates. Application deadline TBD. Interested in hosting this institute? Contact [Tavia Cummings](#) in the CUR National Office.

Upcoming Events

Spring 2018

January 19–21, 2018, University of Central Florida, Orlando. **Initiating and Sustaining Undergraduate Research Programs.** This institute is designed for campuses that are establishing new undergraduate research programs or centralized undergraduate research offices and those expanding undergraduate research opportunities from a single department to a campus-wide program. Application deadline is November 15, 2017.

February 15–17, Hyatt Regency Crystal City, Arlington, VA. **CUR Dialogues.** This conference is designed to bring faculty and administrators to the Washington, DC, metropolitan area to interact with federal agency program officers and other grant funders.

April 4–7, University of Central Oklahoma. **National Conference on Undergraduate Research (NCUR).** National conference dedicated to promoting undergraduate research, scholarship, and creative activity in all fields of study for students.

April 2018.
Undergraduate Research Week

April 2018, Washington, DC.
Posters on the Hill (POH)



Summer 2017: Councilors of the CUR Biology Division gather in Flagstaff.