



BIOLOGY NEWS

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Note from the Biology Division Chair



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

Welcome to the Spring 2018 edition of the CUR Biology Division newsletter! The CUR Biology Division has been working hard on our ongoing and new initiatives throughout the early spring. Our subcommittees have selected the spring student travel awardees and our undergraduate research mentor

awardees. In addition, we are in the planning mode for both the Annual Business Meeting and CUR Biennial in June. The Biennial begins on Saturday, June 30, with divisional meet and greets and we look forward to seeing many of you there! For more information, visit the CUR Biennial Conference webpage.

[https://www.cur.org/conferences and events/cur biennial conference 2018/](https://www.cur.org/conferences_and_events/cur_biennial_conference_2018/)

Finally, I want to congratulate re-elected Biology Division Councilors Shere Byrd, Larry Wimmers, and Jackie Morris, and give a gracious welcome to our newly elected councilors Jason Askvig, Natalia Coleman, Lee Coates and Orianna Carter. •

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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Council on Undergraduate Research

Bios of Newly Elected Councilors: Jason Askvig



Jason Askvig is entering his sixth year in the Biology Department at Concordia College in Moorhead, MN. Askvig received his

PhD from the University of North Dakota in 2012 where he studied the mechanisms of neuronal survival following injury in the hypothalamus. Most of Askvig's teaching is focused on Anatomy and Physiology and Cell Biology courses, specifically teaching the intro course to the biology major for first-year students in their first semester.

In addition to Askvig's teaching responsibilities, he has also been highly active in engaging undergraduates in research, both in his laboratory research and the classroom. Askvig's research is still focused on elucidating intracellular signaling pathways that neurons utilize to promote survival following injury and his lab has consisted of four to five students per year. His students have presented their research at numerous national conferences, including American Society for Cell Biology, Society for Neuroscience, and NCUR over the past several years.

Askvig has also been active in Concordia's efforts to increase diversity in STEM. In 2016, Askvig and colleagues attended the Broadening Partnership Institute hosted by CUR. Additionally, Askvig is a co-PI on an NSF-S-STEM grant that provides scholarship, research experiences, and other programming to help increase diversity and retention in STEM.

E. Lee Coates



E. Lee Coates is a professor of biology, neuroscience, and global health studies and the founding director of the Undergraduate Research, Scholarship, and Creative Activities Office at Allegheny College. Coates earned his BA in zoology from the University of Montana and his PhD in physiology from the University of New Mexico School of Medicine. He conducted postdoctoral research at Dartmouth Medical School and has been at Allegheny College since 1992. Coates has been the PI for institutional grants from the Howard Hughes Medical Institute and Keck Foundation and has served as the chair of the Neuroscience Program, chair of the Faculty Review Committee, and a member of the Allegheny College Faculty Council. In 2015 the Faculty for Undergraduate Neuroscience awarded Coates with its Career Achievement Award. Coates has received funding for his research on sensory neurophysiology, control of breathing, and SIDS from the NIH and NSF and has numerous publications with undergraduate student coauthors. He has supervised more than 150 undergraduate fourth-year research projects during his 26 years at Allegheny. •

Measuring Student Learning Gains in Independent Research Experiences in the Sciences through Reflective Practice and ePortfolios

Kristin Picardo (St. John Fisher College)

Described here is a case example of how a sound assessment plan can measure student learning, improve mentoring, and lead to overall program improvement of the high-impact practice of undergraduate research in the sciences. Students often engage in a mentored research experience, complete a final poster or paper, and even perhaps present their work to others without reflecting upon their own development through the process. To have the promised impact, students must be able to recognize the skills and habits of mind they are developing in order to continue to improve. Our plan offers students structured reflection activities, along with professional presentation of their ideas through the use of an ePortfolio, to document their growth.

Students at St. John Fisher College have the opportunity to participate in a competitive, 10-week, intensive summer research experience mentored by a faculty member. Though the program began in 2011, formal evaluation of the Summer Science Fellows research program began in 2016. Only a final reflection at the end of the 10-week experience was required of students in this cohort. In 2017, students were guided through three prompted reflection experiences and were

required to utilize an ePortfolio to house their reflections as well as key components of their research experience (proposals and final posters). Students in both cohorts were required to complete both the Prereflection and SURE III nationally vetted surveys designed to measure self-reported learning gains in independent research by Prof. Lopatto at Grinnell College (developed with HHMI funding). In 2016, students rated their learning gains on the SURE III survey lower than those students who participated in the survey at other colleges and universities across the country. In 2017, the cohort that completed the three reflections and ePortfolios, reported their learning gains on par with those students nationally.

Independent student research and ePortfolios are both considered high-impact practices by the Association of American Colleges & Universities. Undergraduate research experiences provide students with unscripted, active learning opportunities where the students take the lead in inquiry, problem solving, and analysis. The reflections and ePortfolios provide a mechanism for students to study and then communicate their own progression and development as scientists in a way that research alone does not provide. The metacognitive practice of prompted reflection and composition of the ePortfolio itself improves students' recognition of their learning gains. The coding of student reflections and SURE III survey data, taken together, show synergy and

agreement pointing to areas of focus for program improvement moving forward. •

2017–2018 Outstanding Mentor Awardees, CUR Biology Division



Early Career: **Rachelle Belanger**, associate professor and assistant chair of biology at University of Detroit at Mercy. Belanger received her undergraduate and master's degrees from

the University of Windsor and her PhD from Bowling Green State University. Her research is focused on how sexual development and steroid hormones modulate the olfactory system. She has several papers coauthored with her undergraduate mentees, and their work has been recognized via several undergraduate student awards, both regionally and nationally. In her nomination materials, her colleagues indicate that she is “continually working with undergraduate students in a research setting, and is constantly looking for new ways to incorporate research into traditional teaching laboratories.” Her students say that she spends time to truly get to know them and takes a sincere interest in their careers and personal goals.

Mid-Career: **Amit Dhingra**, associate professor of genomics and biotechnology at



Washington State University. After completing his undergraduate and graduate education in India and postdoctoral fellowships at Rutgers, University of Central

Florida, and University of Florida, Dhingra joined the Department of Horticulture at Washington State University where he works in the area of plant genomics and biotechnology. Many of his student mentees have been a part of an institutional REU at WSU, where he has developed an “uncanny ability to connect with and engage students, especially underrepresented minority students.” His student mentees indicate that Dhingra was willing to push them to participate outside of their comfort zones and enhanced their abilities and career options.

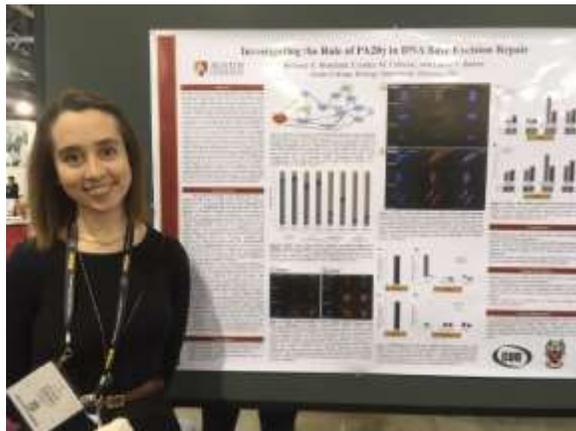
Advanced Career: **William (Bill) Ensign**, professor of biology in the Department of



Ecology, Evolution, and Organismal Biology at Kennesaw State University. Ensign received his bachelor's degree from George Washington University, his master's degree from

University of Tennessee, and his PhD in fisheries science from Virginia Tech. After working as a research scientist for the U.S. Forest Service and the Virginia Tech Department of Fisheries and Wildlife Sciences, he joined the faculty at Kennesaw State. His research broadly focuses on fish diversity, distribution and abundance in freshwater streams and rivers. Ensign has multiple publications with undergraduates and regularly has had students presenting their work at regional and national conferences. Ensign has “created a rich community of research groups to allow students to work to their strengths within a given project.” His students indicate that he is an enthusiastic model of a successful scientist. •

Student Profile: Travel Award Recipient from Austin College



Bethany Bundrant is a double major in biology and Spanish with a minor in music at Austin College. She will graduate with honors in biology after completing her honors thesis this spring (mentored by CUR Councilor Lance Barton).

Bundrant has received two prestigious awards to support her thesis work. First, she received a \$500 research scholarship from Beta Beta Beta (Tri-Beta), the national biology honor society. This award supported the purchase of supplies for her research. When she presented her results at the TriBeta South Central Regional Convention on April 7, Bundrant also won the first place Frank G. Brooks Award for Excellence in Student Research. In addition to her TriBeta honors, Bundrant also received a Grant-in-Aid of Research (GIAR) from Sigma Xi. These awards are supported by the National Academy of Science and administered by Sigma Xi, the national scientific research honor society. Bundrant is now the third AC student in recent years to receive one of these very competitive grants (Akshaya Selvamani in 2014, Dilan Shah in 2016) and the third student from the Barton lab to receive one (Shah in 2016 and Anne Gunter in 2009).

Bundrant received her CUR Biology travel award to present her thesis research at the American Society for Cell Biology and European Molecular Biology Organization joint meeting in Philadelphia in December 2017. While at the conference, Bundrant earned a third-place presentation award in the undergraduate poster session. She was recognized alongside students from Gustavus-Adolphus, Drexel, Northwestern, University of Pennsylvania, and the University of the Sciences. Bundrant has also received the Undergraduate Scientific Research Award from Austin College. This award recognizes one student annually, in the sciences, who embodies the value of “learning through research.”

She has already prematched to the University of Texas Health Science Center at Houston, McGovern Medical School, for fall 2018. She hopes to continue to pursue research opportunities while in medical school.●

Transforming Undergraduate Research Culture and Curricula
Capital University • October 12–14, 2018

Application deadline: August 17, 2018
[Webpage](#)

Research Experiences for Undergraduates Symposium
Alexandria, VA • October 28–29, 2018

Nominations open: July 9, 2018
[Webpage](#)

Upcoming Deadlines

CUR Events

Visit the CUR Community

<http://community.cur.org/home>

and the CUR webpage

https://www.cur.org/conferences_and_events/

Conferences

ASM Conference for Undergraduate Educators: Prepare Students for the Next 25 Years: Workplace, Research, Society.

Austin, TX, July 26–29, 2018. Registration opened on February 1, 2018.

<https://www.asm.org/index.php/asmcue>

Second World Congress on Undergraduate Research, Carl von Ossietzky University of Oldenburg, Germany, May 23–25, 2019: The abstract submission portal is expected to open on June 22, 2018.

<https://www.uni-oldenburg.de/en/forschen-at-studium/world-congress-on-undergraduate-research/>

Gordon Research Conference: Undergraduate Biology Education Research, June 23-28, 2019, Bates College. Additional information will be available by August 1, 2018.

<https://www.grc.org/undergraduate-biology-education-research-conference/2019/>

Grants and Awards

NSF: Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR), call open, variable deadlines

https://nsf.gov/funding/pgm_summ.jsp?pi_ms_id=505082&org=NSF&sel_org=NSF&form=fund

NIH: AREA (R15) Academic Research Enhancement Award. Upcoming deadlines June 25 and October 25.

<https://area.nih.gov/>

