



BIOLOGY NEWS

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Message from the Biology Division Chair

Karen K. Resendes (Westminster College)

Hello and welcome to the winter 2020 Biology Division newsletter! As division chair, I'd like to take this opportunity to remind you of some great resources within the Biology Division and CUR wide.

For those of you sending undergraduates to conferences this year, consider having your students apply for a [Biology Division Travel Award](#). The deadline for spring conferences is January 13, 2020.

Would you like to learn more about grant opportunities in both research and education? Consider attending CUR Dialogues this February in Arlington, VA. This informational and networking event is a great way to build your knowledge and skills in grants. In addition, several specialized postconference workshops are available. Visit the [CUR Dialogues webpage](#).

Did you know CUR now has a [YouTube channel](#)? The site features CUR developed content and videos from member institutions. •

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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Meet the Councilors



Mike Wolyniak is the Elliott Associate Professor of Biology and the director of undergraduate research at Hampden-Sydney College in Virginia, one of three all-male colleges remaining in the United States. At Hampden-Sydney, Wolyniak teaches courses in genetics, molecular biology, and biochemistry as well as a seminar-style course in bioethics. He has focused his efforts on developing course-based undergraduate research experiences (CUREs) in these classes to maximize the number of students who receive authentic research experience as a part of their education. One of these CUREs allows students in Wolyniak's Molecular and Cellular Biology class to work with the brewmaster at the Third Street Brewery of Farmville, VA, to manipulate yeast strains to improve their efficacy for making specific types of beers. Projects like this fully engage the students and allow them to see the many ways they can apply a degree in biology to their future careers.

In CUR, Wolyniak has spearheaded the Mentoring the Integration of Research into the Classroom (MIRIC) initiative, a project that pairs current and future instructors with mentors who are familiar with developing and implementing successful CUREs. In MIRIC, these mentorship

working groups engage in long-term and tailored consultation with the goal of helping mentees to convert their original research into course modules that can be effectively used for their students in a classroom setting. Over the past two years, MIRIC has worked with several members of the Biology Division as both mentors and mentees and has established regular virtual meetings for discussing both literature on best practices for CURE development and specific participant issues with their own work. In the long run, MIRIC may serve as a model for other CUR divisions to emulate to provide mentorship experiences for their own members. •

Meet the Councilors



Dan Westholm is in his third year as a Biology Division councilor. Westholm earned his PhD from the University of Minnesota in biochemistry, molecular biology, and biophysics, studying blood-brain barrier transporters. For the last 10 years, Westholm has taught biology at the Col-

lege of St. Scholastica, a small liberal arts college in Duluth, MN. He primarily teaches microbiology-related courses including microbiology, virology and the HHMI SEA-PHAGES series where students isolate, purify, and characterize novel bacteriophages. This year, he began

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Westholm

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participating in a pilot program offshoot of the SEA-PHAGES courses called GENES (Gene-function Elucidation by a Network of Emerging Scientists) where students work at discovering gene function through a variety of phenotypic and interaction assays. As a CUR councilor, Westholm has worked with Jackie Norris on the organization of the student travel awards and have enjoyed meeting and working with all of the other councilors. Westholm and his wife have three kids (two girls and a boy) and two dogs who they love to involve in their other passions—Nordic skiing and wilderness canoe tripping. •

projects. O'Brien has been heavily involved in promoting undergraduate research on her campus and helped to formalize student research policies within the biology programs at DSU. As part of this, O'Brien has served on the Utah Academy of Sciences, Arts, and Letters board for 12 years, including service as the Academy president. She has reviewed articles for SPUR and assisted the Biology Division advocacy group. O'Brien has served as a CUR councilor in the Biology Division and has become involved in the Biology Mentoring the Integration of Research into the Classroom this year to help others add research to their courses. She is passionate about providing students with authentic research experiences and finds deep satisfaction in mentoring research students. •

Meet the Councilors



Erin O'Brien is professor, chair of biological sciences, and director of the Outdoor Leadership Academy at Dixie State University (a public, primarily undergraduate institution in southern Utah). She

earned her bachelor's degree in biology at Bryn Mawr College and her PhD in ecology and evolution at the University of Illinois at Chicago. At DSU, O'Brien teaches courses in plant physiology, biostatistics, and experimental design that all include course-based undergraduate research experiences (CUREs). Her students have assisted the Bureau of Land Management, the National Park Service, local nonprofits, and a regional hospital with their course-based



CFP, win 2020 Scholarship and Practice of Undergraduate Research (SPUR),
“Nontraditional Approaches to Undergraduate Research.”

Proposal deadline:
February 10, 2020

CUR Task Force Completes New White Paper on Faculty Work and the Mentoring of Undergraduate Researchers

Janet A. Morrison (College of New Jersey)



A CUR task force was formed in 2018 to create a white paper on the issue of recognizing and valuing faculty work in the mentoring of undergraduate researchers. The

white paper, *Recognizing and Valuing the Mentoring of Undergraduate Research, Scholarship, and Creative Activity by Faculty Members: Workload, Tenure, Promotion, and Award Systems*, is [posted on the CUR website](#).

The task force conducted a literature review to explore the current state of knowledge about the need for equitable valuation of faculty mentoring work and assembled a series of recommendations and existing exemplars for each. The primary message of the white paper is shown by its abstract:

To increase faculty participation and to recognize the strategic educational position held by undergraduate research, scholarship, and creative activities (URSCA) in many institutions, faculty mentorship of undergraduate students needs to be valued as a standard component of workload and formally included in activity reports and evaluations, including those that lead to reappointment, tenure, and promotion. This white paper presents the need for recognition of faculty mentorship of

URSCA, recommends best practices for institutions to adopt, offers a selection of case studies that features some of these practices, and summarizes upcoming challenges.

The task force expects this white paper to be a persuasive document useful to those advocating at their institutions for greater recognition and valuation of mentoring undergraduates in research. •

Biology Division Selects Three Mentor Awardees for 2019

Janet A. Morrison (College of New Jersey)

The CUR Biology Division's Biology Mentor Awards honor biology mentors for their long-term efforts in supervising undergraduates in research. The awardees for 2019 continue to represent deep commitment to students and engagement in the pursuit of new biological knowledge.

The Early Career Mentor Award was awarded to **Jessica Malisch**, assistant



professor at St. Mary's College of Maryland. She conducts research on avian endocrinology and metabolism, with projects focused

on stress responses in white-crowned sparrows near Yosemite National Park and in white-throated sparrows and juncos in southern Maryland. Undergraduate students work closely with her at both sites, resulting in numerous peer-reviewed, student coauthored papers and presentations and student research awards.

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2019 Mentor Awardees

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Malisch also brings her strong research focus into the classroom, where she incorporates real research experiences starting in her first-year seminar and mentors students in the “St. Mary’s Project,” their capstone experience.



Marina Cetkovic-Cvrlje, professor at St. Cloud State University, won the Mid-Career Mentor Award. She has consistently pursued her research interests in the biology of Type I diabetes in colla-

boration with 118 diverse undergraduate students, with very strong outcomes. Her students have been awarded many grants and made many presentations, including 20 award winners, and they have coauthored peer-reviewed papers. These outcomes are built on a foundation of deep commitment to students as researchers, which extends well beyond her own lab group. For example, she organized the Minnesota State Undergraduate Research Conference, facilitated a faculty learning community on undergraduate research on her campus, and has made numerous presentations about undergraduate research as professional conferences.



The Advanced Career Mentor Awardee was **Amelia Ahern-Rindell**, associate professor at the University of Portland. Trained as a geneticist and cell biologist, Ahern-Rindell pursues a long-standing

research program on lysosomal storage disorders, with extensive involvement of under-graduate researchers. Over a 27-year career as a professor at primarily undergraduate institutions, she has mentored more than 100 undergraduates in research, with the majority pursuing projects related to her own research program and resulting in fourth-year or honors theses and conference presentations. She also has published peer-reviewed papers and conference abstracts with many undergraduate coauthors, including on a second research interest, the teacher-scholar model and ethics in mentoring undergraduate research. A focus on learning through inquiry and research drives Ahern-Rindell’s teaching practice as well as her lab research. She was an early developer of student-centered, inquiry-based approaches in the teaching lab and classroom, with NSF-funded initiatives as early as 1994.

Nominations, 2020 Mentor Awards

For information on nominations for the 2020 Biology Division Mentor Awards, visit the [Mentor Awards webpage](#). Mentors can be self-nominated or be nominated by their students or colleagues. The deadline for student nominations is February 1, 2020. The deadline for self- and colleague-nomination materials is March 1, 2020.●

Cell Biology Education Consortium

Roslyn Crowder (Stetson University)

The [Cell Biology Education Consortium](#) (CBEC) is a NSF-funded Research Collaborative Network for Undergraduate Biology Education (RCN-UBE). Nathan Reyna, associate professor at Ouachita University, is principal investigator and Lori Hensley, professor at Jacksonville State University, is co-principal investigator. The CBEC network is composed of faculty who incorporate cell culture-based research into the classroom.

The CBEC is a coordinated effort to compile resources and provide funding and training that makes designing and executing cell culture-based research projects easier to implement at both primarily undergraduate institutions and community colleges where funding availability may be scarce. The primary activity of CBEC is the development of “Cell Blocks” or modules consisting of written and video protocols. Cell Blocks are developed by faculty and their students and shared making it adaptable to faculty and students at similar schools. Current Cell Blocks include a Cancer Cell Block and a Differentiation/Neuron Cell Block. Cell Blocks are coordinated and interchangeable. Based on a faculty member’s area of research, Cell Blocks can be combined in various ways to address specific cell biology questions.

Proposals can be submitted for review to obtain a \$3,000 voucher to support the cost of starting a cell tissue culture project. Voucher proposals are reviewed three times per year. Proposal deadline dates are January 15, July 15, and October 15. Three types of vouchers are available: Cell Block Development vouchers, Classroom

Implementation vouchers, and Student Summer vouchers. Cell Block Development awards are available to CBEC members working with undergraduate students. Classroom Implementation vouchers awards support the implementation of multiple modules into the classroom. Student Summer vouchers are available to support summer research network institutions. Funds can assist with student travel between network research sites and a student’s home institution, housing or conference attendance.

In its first year, the CBEC supported 171 students performing cell culture-based projects at more than 10 schools. The CBEC has recently funded four new projects that will implement Cell Blocks into classes during the spring 2020 semester.

The CBEC will also be hosting a symposium at the 2020 Association of Southeastern Biologist (ASB) Annual Meeting that will be held in Jacksonville, FL, on March 25–28. The symposium will highlight CBEC research incorporated into the classroom by network faculty.

Learn more about what CBEC faculty are during CBEC takeover weeks on Instagram ([@CellBioEd/#CellBioEd](#)). Sumali Pandey (Minnesota State University Moorhead) and her Cell Culture class will be taking over in January 2020.

Interested in joining the CBEC? Visit the [CBEC webpage](#).

Upcoming Deadlines

CUR Events

Visit the [CUR website](#) and the [CUR events webpage](#)

Conferences

[Association for Biology Laboratory Education \(ABLE\) conference](#), UC San Diego, June 23-26, 2020.

[ASCB 2020 Regional Educators' Conference](#), Soka University, Aliso Viejo, CA. May 30, 2020.

[ASM Conference for Undergraduate Educators \(ASMCUE\)](#), Bellevue, WA, July 9-12, 2020. Session proposals, posters, workshops due February 15, 2020.

Grants and Awards

NSF:

[Research Coordination Networks in Undergraduate Biology Education](#). Full proposal deadline January 21, 2020.

[Research Experiences for Undergraduates](#). Deadline: August 26, 2020.

[Improving Undergraduate STEM Education \(IUSE\)](#). Key deadlines are February 4, 2020; August 4, 2020; December 1, 2020 (depending on the track applied for)

NIH: [Research Enhancement Award](#) (R15), deadlines February 25, June 25, and October 25 for most applications.

[Fulbright Scholar Award](#): Application opens in February 2020 for research and/or teaching abroad for the 2021–2022 academic year.

CFP, spr2021 **Scholarship and Practice of Undergraduate Research:**

[“Undergraduate Research and Climate Change”](#)

Proposal deadline: April 7, 2020

[CUR Broadening Participation Institute](#)
Carroll University
March 20-22, 2020

Registration deadline:
February 10, 2020



CUR Biology Division councilors gather at The Ohio State University in summer 2019.