

Spring, 2020

National Collaborative for Research on Food, Energy, & Water Education (NC-FEW)

COVID-19 AND NC-FEW

Colleagues, on behalf of the NC-FEW leadership team, I would like to extend our warmest of greetings to you during these difficult times. COVID-19 has impacted our professional and personal lives profoundly and will undoubtedly continue to do so in the months to come. We know that current circumstances have necessitated rapid and substantial changes to many aspects of our teaching and research activities, both of which are critical elements of NC-FEW's mission. Most of us are facing new obstacles and challenges, unprecedented questions, and uncharted territory that we must now navigate as productively as possible. It is important to first recognize these as shared experiences and, second, to attempt to identify any points of hope that may lead to opportunities – both short- and long-term – to enhance our work and impacts on FEW-focused educational endeavors.

You may be wondering how the pandemic will effect NC-FEW. In the short-term, the NC-FEW leadership team was preparing for a spring and summer season focused on face-to-face engagement with an array of professional communities, as well as our annual Multistate Research Group meeting (NC1207). With the cancellation of most conferences and meetings, these plans will be significantly curtailed. In essence, we will move our window of action forward, though the length of this health-related disruption remains uncertain. We still hope to plan and hold our first national invited meeting of NC-FEW participants sometime in the first half of 2021 and will be working to cultivate capacity for NC-FEW in whatever ways we can prior to this meeting. We will continue to hold webinars and distribute newsletters. The working groups will continue their efforts to make progress toward NC-FEW goals and objectives. Most importantly, we will continue to communicate with NC-FEW participants through email, the website, and social media to share information, resources, and opportunities relevant to NC-FEW's mission. While the present situation was not part of our plans, NC-FEW is well-positioned to continue moving forward to enhance education and education research in the FEW-Nexus.

Finally, as a community-driven network, NC-FEW is strengthened by contributions from its participants. If you have suggestions, feedback, or recommendations for additional ways that NC-FEW can serve its participants during these challenging times, please consider passing those along [through the website](#), directly to admin@ncfew.org, or to members of [the leadership team](#).

Cory T. Forbes, NC-FEW Director

WEBINARS

The first community webinar was held on Friday, December 13. During the webinar, the Leadership Team provided an overview of NC-FEW, including planned activities and ways for NC-FEW Affiliates to engage with the community, followed by an open Q&A session. **Please be sure to join us for the next webinar, scheduled for Friday, May 1 at 2:30 CST**, which will focus on the three NC-FEW working groups and their contributions to advancing community endeavors.

POSTSECONDARY WORKING GROUP

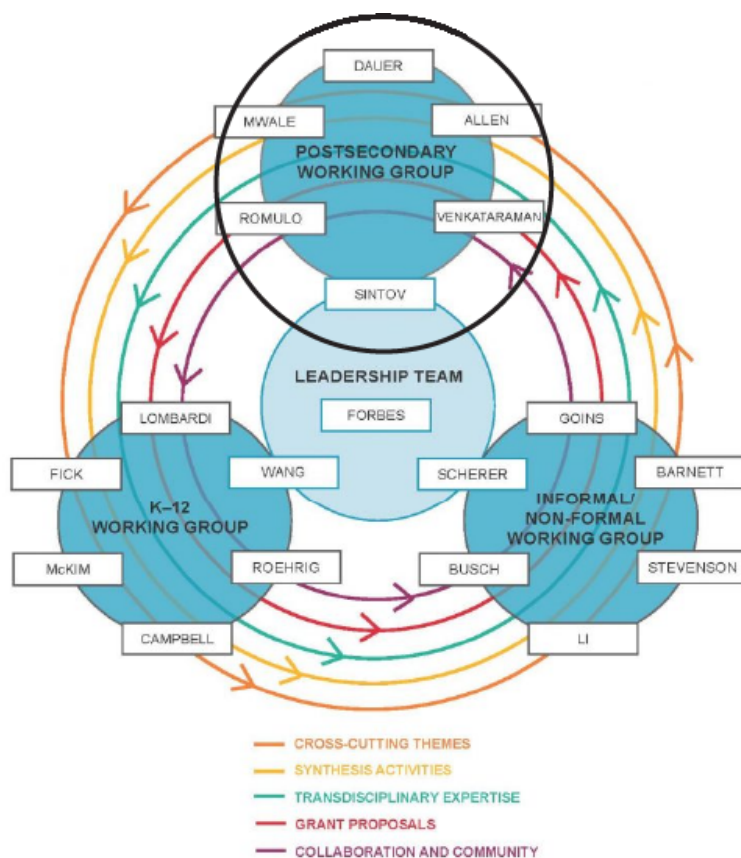
OVERVIEW AND GOALS

As described in NC-FEW's winter, 2019 newsletter, addressing complex FEW-Nexus challenges requires interdisciplinary knowledge and skills and involves tradeoffs to develop solutions that are cost-effective, environmentally sustainable, socially responsible, and acceptable to consumers. Therefore, the FEW-Nexus problem space offers a prime context for supporting learners of all types in learning about, applying, and integrating ideas and methods across diverse disciplines.

The goal of the postsecondary education working group is to leverage the FEW-Nexus to understand and strengthen approaches to interdisciplinary

STEM/FANH education amongst postsecondary students. We will accomplish this by: (1) framing a set of student learning outcomes that promote interdisciplinary thinking and problem solving among undergraduate and graduate learners; (2) identifying empirically-supported measures of these outcomes; and (3) identifying and/or

developing resources (e.g., curricular elements and sequencing) that can support educators in engaging and supporting postsecondary learners in achieving these outcomes.



The group will also consider what is needed at different levels of postsecondary education (e.g., undergraduate and graduate) to work toward appropriately tailored approaches that support student learning.

Further, we consider interdisciplinary education as a broad framework or input into a larger educational system, with the potential to yield a variety of outputs. Hence, we view interdisciplinary education as a core theme in NC-FEW to which many other themes can link.

As an illustrative example, interdisciplinary education in the FEW-Nexus can provide learners the opportunity to link seemingly disparate concepts over dynamic temporal and geographic scales. Hence, such education can serve as a means of fostering systems thinking—a potential student learning outcome. What pedagogical approaches, curricular elements, and assessment methods can educators use to foster systems thinking? How should systems thinking be measured at different educational levels? These are the types of guiding questions that the postsecondary education group aims to address.

THE GOAL OF THE POSTSECONDARY EDUCATION WORKING GROUP IS TO LEVERAGE THE FEW-NEXUS TO UNDERSTAND AND STRENGTHEN APPROACHES TO INTERDISCIPLINARY STEM/FANH EDUCATION AMONGST POSTSECONDARY STUDENTS

POSTSECONDARY WORKING GROUP

MEET THE TEAM

JENNY DAUER

Assistant Professor of Science Literacy in the School of Natural Resources, University of Nebraska-Lincoln

Jenny Dauer conducts research on how students gain science literacy skills including science-informed decision-making, explanations and arguments from evidence, and systems thinking. She designs and implements research-based teaching models as the lead instructor of a large enrollment college course called *Science and Decision-making for a Complex World*. The course uses food, energy, water nexus socioscientific issues as a backdrop for students to learn and practice science literacy skills that ideally transfer to real-world decision-making. She and her research team are excited to make connections across the NC-FEW network as a way to think collaboratively about how best to investigate FEWs teaching and learning and connect theoretical understanding to teaching practice.

CHELSIE ROMULO

Assistant Professor in the Department of Geography, GIS, and Sustainability at the University of Northern Colorado

As a graduate student fellow under a NSF Widening Implementation & Demonstration of Evidence-Based Reforms (WIDER) project, Romulo worked on testing the efficacy of classroom activities in achieving teaching and learning goals. She has one publication in the *Athens Journal of Education* and a second in the *Journal of College Science Teaching*. Currently under review with NSF is an IUSE grant to develop a Next Generation Concept Inventory for large-scale assessment of short answer responses in college-level environmental program courses related to FEW topics. Romulo joined the NC-FEW network after attending the FEW workshop in May 2018 to network with other environmental educators on FEW topics.

CRAIG ALLEN

Professor in the School of Natural Resources, University of Nebraska-Lincoln

Craig Allen is helping create a Center for Resilience in Working Agricultural Landscapes at the University of Nebraska-Lincoln. He was a federal employee for 20 years, and was founding leader of the Nebraska Cooperative Fish and Wildlife Research Unit. His research focuses on resilience in complex systems of humans and nature. Craig is interested in the FEW-Nexus as it exemplifies the need to blend theory with practice in complex social-ecological systems, especially in working landscapes. NC-FEW allows for peer-to-peer learning, as well as the opportunity to communicate what works and what doesn't, particularly in the context of institutions of higher education.

MARIZVIKURU MWALE

Senior Lecturer and Postgraduate Coordinator in the Institute for Rural Development, University of Venda (South Africa)

Mari holds a PhD degree in Animal Science. She is a certified Professional Natural Scientist with the South African Council for Natural Scientific Professions. She also is a 2019/2020 Executive Member of the South African Young Academy. She is a member of the International Association for Community Development, South African Society for Animal Science and Society for Medicinal Plants and Natural Products (GA). Mari has received recognition as a promising young scientist from the National Research Foundation (NRF) of South Africa. Mari joined the postsecondary working group because she trains postgraduate students and actively participates in community-engaged research for impacting societies. This creates an opportunity to learn and share with colleagues and making a difference in the science field and subsequently societies.

BHAWANI VENKATARAMAN

Associate Professor of Chemistry at Eugene Lang College of Liberal Arts, The New School

Bhawani Venkataraman 's research is the field of chemical education and science communication. She has been investigating the effectiveness of socially relevant contexts to engage students in the learning of chemistry. Along with her students, she is developing a visual, interactive tool to explore the science and societal issues around electrical energy sources. She is currently working on a book which stresses the importance of the chemical behavior of water to social and policy implications for management of safe drinking water.

FUNDING OPPORTUNITIES

[NSF INCLUDES Planning Grants](#)

Submission Deadline: July 13, 2020

Supports projects that build capacity for the development of collaborative infrastructure to: (a) facilitate innovative partnerships, networks, and theories of action for broadening participation in STEM at scale and (b) lead to the establishment of future centers, alliances, or other large-scale networks to address a broadening participation challenge.

[Improving Undergraduate STEM Education: Education and Human Resources \(IUSE: EHR\)](#)

Submission Deadline: August 4, 2020

Supports novel, creative, and transformative approaches to generating and using new knowledge about STEM teaching and learning to improve STEM education for undergraduate students. 8/4 deadline for *Engaged Student Learning* (Level 1) and *Institutional and Community Transformation* (Capacity-Building and Level 1) tracks.

[Research Experiences for Undergraduates \(REU\) NSF Wide Programs](#)

Submission Deadline: August 26, 2020

The REU program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. Proposals can be submitted as stand-alone projects or supplements to existing NSF-funded projects.

[Agriculture and Food Research Initiative - Education and Workforce Development](#)

Submission Deadline: September 24, 2020

The Agriculture and Food Research Initiative - Education and Workforce Development (EWD) focuses on developing the next generation of research, education, and extension professionals in the food and agricultural sciences.

NEWS & EVENTS

Wednesday August 5, 2020

Association for the Advancement of Sustainability in Higher Education (AASHE) Webinar Series

3:00-4:00 EDT

<http://tiny.cc/mmdymz>

NC-FEW ON TWITTER



Follow us on Twitter at
[@nc_few](https://twitter.com/nc_few)
to stay connected to
the community!

GET INVOLVED!

Do you study or evaluate FEW-Nexus-focused educational programs in K-12, postsecondary, and/or informal/nonformal settings? If so, consider [joining us!](#)

There is no cost to you and NC-FEW participation affords you access to community activities, including travel support to invited meetings, webinars and NC-FEW communications, and designation as an NC-FEW Affiliate.

<http://ncfew.org/get-involved/>

