

AEES QUARTERLY

The Official Newsletter of the American Ecological Engineering Society

Sharing our stories, building networks, and growing together.

www.ecoeng.org



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President's Notes

By: Michael Burchell, PhD
AEES President



“The field of ecological engineering requires collaboration across a wide range of disciplines like ecology, hydrology, soil science, economics, sociology, data analytics, and yes engineering.”

Greetings!

Serving as the President of AEES continues to be an especially fulfilling experience. It helps me stay connected to my continued belief that ecological engineering is needed more than ever to meet the world's environmental challenges. I am also grateful to be surrounded by members who are putting an increasing amount of time and effort to develop ways to strengthen and grow this society.

We hope you will take a few minutes and enjoy the latest edition of this newsletter, and that it helps you feel more connected to the society. Please forward it to your colleagues (academics, professionals, and students) that you believe could benefit from membership, and who can bring new ideas to our society. Remember, the field of ecological engineering requires collaboration across a wide range of disciplines like ecology, hydrology, soil science, economics, sociology, data analytics, and yes engineering. Let's work together and make a concerted effort to ensure disciplines outside of "engineering" are aware that they are always welcome and their expertise and perspectives remain a crucial element of AEES.

I am excited to announce that we plan to kick off our AEES webinar series on Wednesday, December 1st at 3:00 PM EST. AEES founding father and first president Dr. Bill Mitsch will present on his wetland research over the years and point us to future directions in the area. Please [follow this link to register](#)

for this event. Information on the next webinar in the series will be provided in the next edition of the newsletter.

The *Journal of Ecological Engineering Design* is several steps closer to becoming a reality. Co-Editors in Chief Dr. Marc Buetel (University of California – Merced) and Dr. Sara McMillan (Purdue University) will be supported by a strong group of Associate Editors including Dr. Mauricio Arias (University of South Florida), David Austin (Jacobs), Jim Bays (Jacobs), Dr. David Blersch (Auburn University), Dr. Jon Calabria (University of Georgia), Dr. Stewart Diemont (SUNY), Dr. Alex Horne (University of California – Berkley), Dr. Stephanie Hurley (University of Vermont), Dr. Ani Jayakaran (Washington State University), Dr. Andrea Ludwig (University of Tennessee), Dr. Eric Roy (University of Vermont), and Dr. Tess Thompson (Virginia Tech). These editors and the JEED committee are working together with the University of Vermont Libraries to establish the framework and tackle the logistics of rolling out this journal sometime in 2022.

The 2022 AEES meeting in Baltimore (sponsored by the University of Maryland - June 20-23) will be here before you know it! Vice-President Dr. Stephanie Lansing is leading a planning committee that has identified an outstanding venue and is putting together an incredible series of professional and social events. So block out those dates on your calendar and start making plans to join us!

I am also very happy to announce that Mrs. Brittany Santore has taken over our website management and quarterly newsletter editing. Brittany is the Lead Workshop and Conference Coordinator in the Biological & Agricultural Engineering Department at NC State University, and was responsible for the AEES website refresh in 2019. Don't forget to visit our website or share it with your colleagues <https://www.ecoeng.org/>.

Don't forget - working together, we can strengthen this society and further build upon its foundation to make meaningful impacts in the development of sustainable ecosystems that integrate human society with its natural environment - **for the benefit of both!**

Committee Updates

Joining a AEES committee at any time of the year is strongly encouraged. Please contact the Committee Chair if you are interested.

Conference Planning Committee

Chair of Committee – Stephanie Lansing slansing@umd.edu

The 2022 Conference Planning Committee is so excited to welcome everyone to our in-person AEES Conference (June 20-23, 2022) in Baltimore, MD hosted by the University of Maryland. We have a great program coming together at the beautiful [Institute for Marine and Environmental Technology](#), with an amazing \$89/night rate at the [Tru by Hilton hotel](#), with a variety of field trips planned around the Baltimore Harbor and Chesapeake Bay. Mark the dates on your calendars now, as you don't want to miss this year's conference. The Call for Abstracts will be coming out soon.

Diversity, Inclusion, Equity, and Justice (DIEJ) Committee

Chair of Committee – Ani Jayakaran anand.jayakaran@wsu.edu

DEIJ continues to meet every other month. Our current goals are to find ways to support DEIJ efforts at AEES 2022. Creating a code of conduct for the meeting and developing ideas around a survey and listening session centered around DEIJ are two efforts we are pursuing.

Recruitment Committee

Chair of Committee – Michael Burchell mike_burchell@ncsu.edu

Meetings are on the 2nd Monday of the month at 3:30 pm ET

Charge: The AEES Recruitment and Membership committee strives to strengthen the society and our discipline by steadily increasing both our membership numbers and diversity, and developing ways to provide the most economical and beneficial experience for our membership.

2021-2022 Goals

1. Lead the new AEES awards nominations
2. Develop a membership drive to encourage early payment of dues and increase membership
3. Foster development of AEES student chapters
4. Help contribute ideas for quarterly newsletter (identify student and faculty highlights for example)

Body of Knowledge Committee

Chair of Committee – Tricia Moore tlcmoore@ksu.edu

The Body of Knowledge Committee has continued to progress on two parallel tasks: formalizing an ecological engineering body of knowledge document and creating an accreditation pathway for undergraduate ecological engineering programs. On the accreditation front, we continue to explore partnerships with colleagues in biological/agricultural and environmental engineering programs to support creation of criteria specific to ecological engineering programs through ABET (Accreditation Board for Engineering and Technology).

Student Chapter Committee

Chair of Committee – Ana Gabriela Itokazu gabi@auburn.edu

The AEES Student Committee decided to meet once every month, and is currently writing and perfecting its bylaws, as well as designing the Student Design Competition for the upcoming year. We are very happy about working together and would love to have new members, so reach out to the chair of the committee if you are interested!

AEES Member Spotlight

Dr. Tiffany L. Messer

Institution: University of Kentucky

Department: Biosystems and Agricultural Engineering

Position: Assistant Professor and 2021-2023 AEES Secretary

Background: Dr. Tiffany Messer grew up on a farm in eastern Kentucky, where

her love for water resources was sparked. She joined the Biosystems and Agricultural Engineering Department at the University of Kentucky in October 2020. She holds degrees in Biosystems and Agricultural Engineering (University of Kentucky, B.S., 2008) and Biological and Agricultural Engineering (North Carolina State University, M.S. 2010, PhD, 2015). Additionally, Tiffany completed a postdoctoral appointment in the Nicholas School of the Environment at Duke University (2015-2016) to focus on ecological designs and analytical chemistry.

Research and Teaching Interests: Her research interests reside at the intersection of engineering, ecology, and agriculture with an emphasis on environmental biogeochemistry and water resources that are impacted by a range of land uses (i.e., agriculture, mining, urban). Her team works specifically on identifying, tracing, and treating nutrients and emerging contaminants using ecological engineered designs (i.e., wetlands, streams, stormwater control measures). Along with being awarded over \$3.5 million as a project investigator (PI) or co-PI in grant funding, she has been awarded the NSF CAREER Award (2021), USDA AFRI NIFA Postdoctoral fellowship (2016), and the EPA STAR (2012-2015) fellowship. These grants have allowed her to form the Messer Ecological Systems Observations (*meso*) Program, including 13 graduate and 17 undergraduate engineering and natural



resource researchers over the past 5 years that embrace inclusivity, diversity, and community, while studying designs to improve water quality in Kentucky, the southeast, Midwest and beyond.

She loves teaching and has taught GIS for Water Resources (junior-graduate level), Engineering Computer Programming (freshman level), Wetlands (junior-graduate level), Soil and Water

University of Kentucky graduate students Nayelly Rodriguez (left) and Emily Nottingham (right) on the mesoTeam collecting water quality tap samples in Eastern Kentucky.

Engineering (junior-senior level), and Engineering Technical Writing (graduate level) courses. She greatly enjoys hearing about student experiences, connecting students with employers, and guiding students to reach their career dreams.

Most exciting/surprising part of my research and teaching: One of the most exciting parts of her research and teaching is watching students have the “light bulb” go off regarding a new finding or technique they have discovered and then being able to connect their findings to the real world. She also enjoys being able to work in her home state, where her interest in water quality challenges was sparked a child.

Connections to Ecological Engineering: Growing up on a family farm she learned early the importance of sustaining sensitive ecosystems and the balance between production and regeneration of farmlands. Many of the first “ecological engineering” principles she learned was from her grandparents, who were incredible stewards of the land and taught her the importance of using riparian zones to reduce erosion, enhancing soil health by fallowing fields, and preserving habitat for fishing in streams and ponds by limiting farming operations near waterways. Their strong belief in caring and preserving the Earth for future generations is a key component that drives her passion for continuing to work to preserve water resources for future generations today.

Fun fact about Tiffany: She once camped for a week in the Amazon Rainforest in a hammock. However, now in her free time, Tiffany enjoys spending time with her family, which include her husband (Patrick), sons (Elliott (8) and Raymond (5), and 11 yr West Highland Terrier (Oliver). She also enjoys hiking, art projects, traveling, and visiting the family farm.



mesoTeam social distancing kayak adventure August 2020

Get Featured in the Next Edition

We are always looking for new stories to tell, highlighting ecological engineering in academic, industries, locally and abroad. If you have a project you would like highlighted, know someone we should interview, or have pictures of groundbreaking research, please send them to our website manager, Brittany Santore (brittany_santore@ncsu.edu) to be featured in our next edition of the AEES Quarterly.

Career Opportunities

Assistant Professor - Soil Health Scientist

University of Nebraska-Lincoln

Posted 10-29-2021

Department Chair - Department of Coastal Studies

East Carolina University

Posted 10-19-2021

PhD Graduate Student Assistantship

Clemson University

Posted 08-22-2021

MS Graduate Student Assistantship

Central Michigan University

Posted 08-22-2021

Research Associate (Postdoctoral Researcher)

Michigan State University

Posted 07-22-2021

To see full descriptions, contact information, or to post an opportunity, please visit <https://www.ecoeng.org/job-postings>