

AEES QUARTERLY

The Official Newsletter of the American Ecological Engineering Society

Sharing our stories, building networks, and growing together.



Welcome to The American Ecological Engineering Society's new newsletter, AEES Quarterly. This publication will:

- Update AEES members about Executive Committee and Taskforce actions.
- Announce upcoming events
- Offer a platform to highlight member accomplishments and outstanding examples of ecological engineering in action.
- Provide an opportunity outside of the yearly conference for AEES members to connect and maintain a dialogue.

Each newsletter will include a summary sent to our membership email list, with a PDF of the full newsletter attached to the email. Each edition will have Society News, where we'll provide updates about the Business Meeting, Committee progress, and upcoming events; Member Highlights, where members can share their successes in ecological engineering or discuss what's important to them; and Opportunities, where members can "post" open positions and sources for funding that they wish to share with other members.

The newsletter will be successful if YOU - our members - take part! We envision this publication to be a self-organizing, positive feedback loop, providing us an additional way to keep in contact.

To make your own submission for News or Highlights, [please click this link](#).

Society News

President's Notes: Our Society, a Positive Feedback Loop

By Andrea Ludwig, AEES President

Greetings Friends and Colleagues,

The past year has brought new challenges and opportunities to each of us in unique ways, as well as collectively to our professional society. We had many noteworthy accomplishments in 2020 and enter this new year with big goals. The circumstances of the ongoing pandemic along with a growing momentum of activity has highlighted the need for a consistent dialogue throughout the year. This is the first edition of our quarterly communication and it will open with thoughts from the Executive Committee, but we hope that the content in subsequent issues will be carried forward by membership. We hope that this will complement and enhance the energy our annual meeting brings and deepen the ties between us as AEES members.

One of our Society's biggest accomplishments of 2020 was remaining connected through the summer despite the ongoing pandemic. Our regular annual meeting was replaced with a virtual experience in early June 2020. A virtual Student Poster Symposium provided our student members the opportunity to present their work and engage with professionals around the world! At the virtual Business Meeting, our Executive Committee summarized the Society's membership and finances as well as announced an effort to revitalize activities on Society Committees, representing a range of society interests. We are soliciting member volunteers to serve on the following committees: Body of Knowledge/Accreditation; Conference Planning; Recruitment & Membership; Student Clubs; Certified Ecological Designer (CED); Equity & Inclusion; Recognition & Awards. [Please sign up here.](#)

Looking ahead, there is much uncertainty in how the past year will inform the coming years, but we can find security in our bonds through this society. I invite you to reflect on the past year with pride, look to the future with optimism, and seek ways to deepen your ties to the community we have here in AEES.

Even presidents have fun!
Photo Credit: Andrea Ludwig

"We hope that this [newsletter] will complement and enhance the energy our annual meeting brings and deepen the ties between us as AEES members."



Society News

Upcoming events

Committee Sign up- by Feb 17

Take a moment to get involved with one of our committees! Committee updates are provided on pages 6 and 7, but most committee activities will begin within the next couple months! Jump in while things are just getting started!

Please respond by February 17-- Committee members will be accepted on an on-going basis, but some committees will begin their activities beginning in late February.

- **Conference Planning:** Planning the events for the 2021 AEES conference. **Looking for volunteers ASAP** (this committee is more selective)
- **Ad hoc Committee to review abstracts**
- **Body of Knowledge/Accreditation:** Help AEES become an accredited program
- **Recruitment & Membership:** Grow the AEES membership base
- **Student Clubs:** Strengthen AEES ties with undergraduate and graduate students, build and grown student university chapters
- **Certified Ecological Designer (CED)--** Develop the certification
- **Equity & Inclusion:** Make ecological engineering accessible and available to all who would benefit from it
- **Recognition & Awards:** Acknowledge and celebrate members of the society who have gone above and beyond

[Sign up here!!!](#)

20th Annual Meeting of the American Ecological Engineering Society

- Virtual
- Tuesday May 25 and Wednesday May 26*** (note, this is different from our save the date! We adjusted based on the timing of other conferences.)
- Registration and call for abstracts forthcoming

Report on 2020 Business Meeting of the AEES

By David Blersch, AEES Secretary

The annual business meeting of the American Ecological Engineering Society (AEES) was held virtually in 2020, in response to closures and travel limitations enforced because of the novel coronavirus pandemic circumstances. On June 11th, 2020, up to 48 members of AEES attended and contributed to the annual business meeting held via Zoom virtual connections. During the meeting, the various items of business discussed were overall informed by the need to update the workings of the society for the future uncertainties of a world affected and limited by pandemic conditions.

First, three finalists for the 2020 Student Poster Competition, the 2020 virtual conference hosted by the society over the previous weeks, presented their posters virtually to the attendees, all of whom then voted for ranking of the presenters.

Following this, the Secretary's report summarized current membership and past trends with total current membership in 2020 grown to 134 active members, and 856 active email addresses on the list serve. Growth in membership was especially evidenced in student members.

The Treasurer's report outlined the current budget and income, with finances in good order following the successful and profitable Asheville conference in 2019. Major initiatives for financial status of the society include expanding membership rolls, and future application for non-profit organization status by the society.

Report from the conference planning committee laid out a proposed schedule of future conference locations that include Columbus, Ohio (2021); College Park and Baltimore, Maryland (2022); and Tampa, Florida (2023), with the understanding of possible changes due to future COVID pandemic trajectories.

Open discussion focused on at least four points of business pertaining to the future sustainability of the society through new or reinvigorated initiatives. First, the society has adopted a process in seeking accreditation of ecological engineering undergraduate education, a process in negotiation with partner society ASABE and shepherded by the revitalized Body of Knowledge (BOK) committee. Second, the Executive Committee announced a reimagined set of standing active committees for the society, comprising the Body of Knowledge/Accreditation, Conference Planning,

Recruitment and Membership, Student Clubs, Certified Ecological Designer committees, [soliciting volunteers for committees](#) and tasking each with self-development of mission and bylaws for governance. An additional committee was proposed from the floor to focus on Equity and Inclusion. Third, the role and relationship of the society with scholarly journals was discussed, with action proposed to both strengthen relations with the Elsevier Ecological Engineering journal and to form a society's own open-source journal for future publication. Finally, the formation of a Society Fellows program was discussed, with a driving purpose to support early and mid-career professionals and faculty. The management of the program was tasked to the Membership and Recruitment Committee. Activities on all points of business were tasked to the membership through management by the Executive Committee.

The Business Meeting wrapped up with results of officer elections, resulting in the current roster of members of the Executive Committee, and announcement by the ascending president of the Society the winner placement for the student poster finalists. The meeting was called to adjourn by 5 PM EDT, and members tasked with bringing the works of the society to the outside world.

Minutes from the business meeting are publicly available upon request from the ExComm secretary David Blersch at dblersch@auburn.edu. Minutes will be reviewed and called for ratification in the 2021 Business Meeting for the AEES, an event yet to be planned in detail.

Student Poster Competition

In place of the annual conference, the AEES ExComm planned and hosted a virtual student conference for the presentation of student posters by video. Posters presentations were solicited from all active student members of the AEES, through an abstract submission and review by a panel. Ultimately, 38 posters presentation video recordings were submitted by the due date in May 2020, which were then organized into topical cohorts and made available online to AEES members and invitees from the public for one week in May, 2020. During that week, poster presentations garnered over 6,700 views from 1,600 visitors from 14 countries. Panels of judges appointed by the ExComm reviewed and ranked posters and their presentations, and the top 3 poster/presentation students presented at the virtual Annual Business Meeting on June 11, where active members ranked the presentations. The winners rankings from this process are listed below. All 3 finalists then presented at the International Ecological Engineering Society meeting in September, 2020.

Placements in the finalist rankings are as follows:

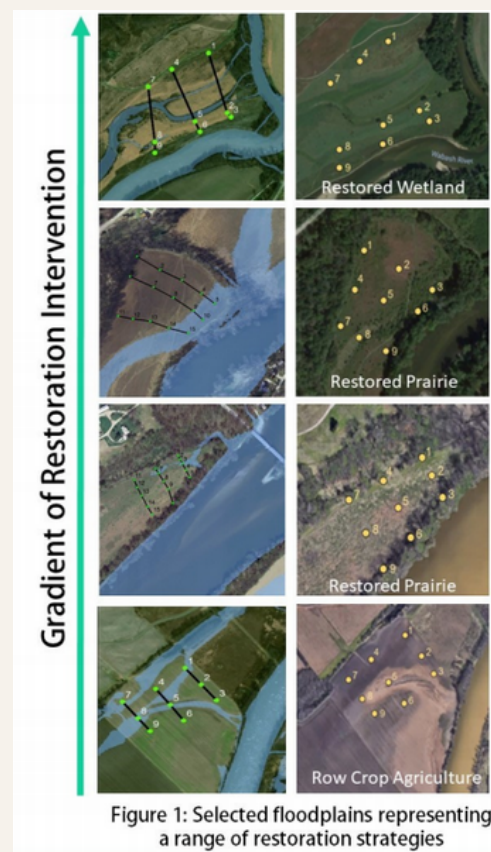
- First place Danielle Winter (Purdue University) with “Designing higher denitrification capacity into riverine floodplain restorations”
 - Second place Diplina Paul (North Carolina State University) with “Fate and transport of the novel Coronavirus in urban water cycles: A review”
 - Third place Adrian Wiegman (University of Vermont) with “Phosphorus dynamics in restored riparian wetlands with an agriculture basin.”
- Cash prizes provided by the society.

Congratulations to all the finalists, and many thanks to all students who submitted and presented at the conference!

Online presentations remain available to view at 2020aesposters.com, and are planned to be archived in the future at the AEES common server for future reference and citation.

Committee Updates: Body of Knowledge & Accreditation Taskforce

The Body of Knowledge & Accreditation committee has made significant progress towards accreditation with ABET for degree programs in Ecological Engineering. This team has continued to nurture a strong relationship with the American Society of Agricultural & Biological Engineers to draft the discipline definition and curriculum, which was proposed to ABET in July 2020. The work continued through the fall to further delineate our unique role in engineering practice as we look forward to official review and consideration for approval in 2021.



*Graphic from Student Poster Competition Winner,
Danielle Winter
Photo Credit: Danielle Winter*

Committee Updates: Journal Taskforce

An ad hoc taskforce has been diligently working towards providing our society an opportunity to forge new ground in open access publication while giving our members an additional platform to publish their work in ecological engineering design. This taskforce has evaluated the need and interest among membership, identified a financially-viable format, and continued to explore the structure needed that will meet the needs of our membership.

Committee Updates: Student Chapter Committee

A committee has been created to increase student involvement in the AEES by working through student chapters. The AEES Student representative has begun reaching out to existing Student Chapters to survey their progress and needs. Moving forward, the greater Committee will meet to discuss how to proceed. Please email francis.524@osu.edu to inform the committee about existing Student Chapters at your school.

Member Highlights—ExComm Edition

Andrea Ludwig President

My contributions in ecological engineering rely on making connections with people and between communities. I connect citizens, professionals, and future practitioners with resources and innovations in landscape management practices that protect water resources. I am an Associate Professor in the Biosystems Engineering & Soil Science Department at the University of

Tennessee (Institute of Agriculture). As the Stormwater Management Specialist for UT Extension, I provide outreach education on natural drainage solutions for the management of urban and agricultural runoff. An alumna of the University of Arkansas and Virginia Tech, both of my graduate advisors were past AEES presidents. I had the opportunity to help host two annual meetings as a graduate



*Student demonstration of design
Photo Credit: Andrea Ludwig*

student and then bring the annual meeting to Knoxville as faculty co-host in 2016. AEES has been an integral part of my professional life-- quite literally-- since day one. Being involved in the society showed me a wide variety of career paths after college, helped guide me to find a perfect fit in academia, and continues to give me the opportunity to work with the most remarkable and passionate people towards shared goals. As current president, I look forward to finding new ways to keep our membership engaged, keep the momentum going, and grow our society. One of my favorite conference memories has to be seeing tracer dye go through the scaled stream restoration designs in the 2008 student design competition at Virginia Tech. That memory narrowly surpasses all the memories from the full-on dance parties that seem to be a staple of our group.

Michael Burchell

Vice President

My role in the realm of Ecological Engineering includes research, teaching, and outreach. I helped develop and teach design and implementation techniques that create or restore ecosystems to maximize key ecosystem services they can provide. I work at the interface of natural resource protection and productive agriculture or urban development, particularly to achieve water quality protection. I have served on the faculty in the Department of Biological and Agricultural Engineering at NC State University since 2003, and currently serve as a Professor and Extension leader for the department. Although I have contributed to projects that include riparian buffers, innovative coastal stormwater controls, and agricultural drainage management, I am most often known as the “wetlands guy” among my peers for my work in natural, restored, and constructed treatment wetlands. AEES has been the number one society for me to share my research and develop new ideas about future research. I feel so strongly about the society that I initiated and fostered the development of the curriculum for the Ecological Engineering concentration in our department. I truly believe the tenets of Ecological Engineering will have an increasing impact on how we manage ever mounting environmental pressures. The annual conference is always my favorite to attend, and has helped me build many professional connections and make a lot of new friends along the way. I look forward to the opportunity for all of us to get to be together in person again! Until then, let’s all pledge to continue our support of both our ecological engineering work and AEES.



*Michael Burchell, measuring elevation changes in a restored tidal marsh in eastern NC.
Photo Credit: Michael Burchell*

Ani Jayakaran Past President

I work on improving the design and installation of sustainable stormwater management systems - particularly systems that employ ecological engineering principles. My academic home is within Washington State University's Extension system, and while I don't teach in a formal classroom, our team works hard on conducting research and creating useful educational materials for a broad spectrum of non-traditional learners. Extension work in the world of stormwater offers opportunities to delve into critical issues that impact urban communities today - climate change and meeting the needs of underserved communities are just two of importance to me. The AEES community has been the bedrock for my academic work, my continuous source of ecological inspiration and friendship, and where most of the people I admire convene. I believe that ecological engineers are uniquely poised to help society ecologically engineer our way out of the environmental challenges we face. My role as past president is to support the current ExComm in any way they need.

David Blersch Secretary

My interest in ecological engineering is understanding and developing the principles and rules of ecological design that can inform the practice as an engineering discipline. For my research, I work on resource recovery and nutrient recycling in aquatic systems, particularly in designed or human-impacted aquatic ecosystems. Thus, my interest has been in designed ecosystems with ecological relationships that close material and energy loops, such as algae cultivation for nutrient recovery, and food production in aquaponics systems, as platforms for understanding ecological systems design. I'm currently Associate Professor of Ecological Engineering in the Biosystems Engineering Department



Above, Ani Jayakaran, installing sap flux sensors to measure tree water use.

Below, installing rain gardens

Photo Credit: Ani Jayakaran



at Auburn University, where since 2013 I both teach and research Ecological Engineering options for our majors. AEES has been a major component of my professional development from my graduate student days, when I attended the very first conference. The members of AEES have been the foremost thinkers on understanding the ecosystem organization for applications in developing sustainable management of the planet. That ethic is generated from the very heart of the foundational principles of the field itself, and that has informed the organization of the society from the beginning. As such, my personal and professional connections with society members continue to be the most valuable for pursuing my career in the field. For the future, over this year, I look forward as Secretary to help organize the structure of our society for its sustainability into the future, and helping to develop the groundwork for the profession of the field, through accreditation and certification programs, that will ensure the value of the contributions of AEES and its members to global human sustainability.

Eban Bean

Treasurer

I have a research and extension appointment at the University of Florida in the Agricultural and Biological Engineering department and have been here since 2016. My work focuses on increasing the functionality of urban green space with emphasis on stormwater management and irrigation conservation. I see my role broadly as helping the regulators and the regulated better achieve their intended outcomes through development of tools and resources that educate these stakeholders and research that fills knowledge gaps. Prior to joining UF, I was on the faculty at East Carolina University (2012-'16) in the Department of Engineering and the Institute for Coastal Science and Policy and I was also briefly with Geosyntec Consultants outside of Atlanta (2010-'11). I only joined AEES in 2018 and was not very familiar with the organization before then. However, I have found a small, but relevant and passionate group of colleagues that are similarly working in the applied interdisciplinary realm of ecological engineering, whether within the walls of academia, industry, or government. The 2018



*Eban designed the Mark Brinson Memorial Stormwater Wetland on the East Carolina University campus when he was faculty there from 2012-16.
Photo Credit: Eban Bean*

meeting was my first in Houston. I really enjoyed the small size of the conference which fostered more discussion and networking than larger conferences. I'm looking forward to finally reconvening at the 2021 annual conference - but also getting the society to a better financial state!

Samantha Francis

Student Representative

I am a Graduate Research Fellow at The Ohio State University, pursuing a PhD in Ecological Engineering. My team is implementing and assessing agricultural edge-of-field best management practices to reduce phosphorus runoff from farms. As a part of this effort, I survey the systems we've installed and analyze economic and energetic efficiency of this technology. I found the national AEES as a junior in the Natural Resource Management concentration at University of Maryland (UMD). At the time, I was working on independent research with Drs Patrick Kangas and Peter May. I met my current advisor, Dr. Jay Martin, at the 2017 conference and this experience is what has made me a strong advocate for student (specifically undergraduate) involvement in AEES. My senior year, I became co-president of the UMD AEES Student Chapter, at which time we achieved the largest undergrad and graduate student turnout from a single university. As presiding Student Representative, my goal is to remove barriers for student members and strengthen bonds with student chapters. I believe that AEES can build mutually beneficial connections within the Ecological Engineering community. Improving student access to the AEES Conference and better-integrating students with the broader Ecological Engineering community could be a boon to this effort.



Samantha Francis, taking in the views of neat-ure!
Photo Credit: Samantha Francis

Opportunities

**MS Graduate Research Assistantship starting Summer or Fall 2021:
Innovative Manure Management & Nutrient Recovery Technology**
University of Vermont
(Post made 11-18-2020)

**PhD or MS Graduate Research Assistantship starting Fall 2021: Agricultural
Hydrology, Nutrient Transport, and Treatment Technologies**
University of Vermont
(Post made 11-18-2020)

Project Manager, Wildlands Engineering
Charlotte, NC
(Post made 11-05-2020)

Tenure-Track Engineering Position
Elon University
(Post made 11-03-2020)

PhD Position, Hydrology of Intermittent Streams
University of Alabama, Idaho State University, Univeristy of Kansas
(Post made 11-03-2020)

Graduate studentship – Floating Treatment Wetlands
University of South Carolina
(Post made 11-03-2020)

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

To make your own submission for News or Highlights, [please click this link.](#)