AEESP Newsletter

Published three times yearly by the Association of Environmental Engineering & Science Professors

July 2025

VOLUME 60 NO. 2

Highlights

Need to renew your 2025 AEESP membership? Go to "Membership > Renew My AEESP Membership" on the AEESP Website: AEESP.org

AEESP Newsletter Submissions

Please send news, conference announcements, job postings, letters to the editor, and other contributions to the Newsletter to Kyle Doudrick at *kdoudrick@nd.edu*. The next newsletter will appear in October 2025.

President's Letter: Facing our challenges with grit

By Lee Blaney, Ph.D.
University of Maryland Baltimore County

Some of you know I'm from Philly. I often tell people that I have that Rocky Balboa spirit inside of me. If you're unfamiliar, Rocky is the protagonist in a number of movies about an amateur boxer from Philly. My father's childhood home was right around the corner from Rocky's house in the first film, and we spent a lot of time in the neighborhood visiting my grandparents. Rocky's story is one of resilience. He's not a great boxer. He takes a lot of punches. The thing that makes Rocky special is that he always gets back up. He perseveres. He has grit.

Back in September, I told you that A(we)SP would accomplish a lot together. A few months later, we were suddenly faced with grave threats to academic freedom, diversity, equity, and inclusion programs, research funding, and much more. Like Rocky, we took a lot of punches. Those punches landed on our colleagues, students, friends, and family. Our teaching, research, and contributions to society were knocked down. We've been intimidated and warned about the consequences of pushing back. We're not just dealing with a different political agenda – these punches have jeopardized public health and wellbeing, core tenets of our code of ethics. Nevertheless, we persisted and did not back down.

In January, I promised you that AEESP would relentlessly pursue our mission in the face of political interference with higher education. We were one of the first organizations to publicly speak out against harmful executive actions and policy changes. We affirmed that our strength stems from our diversity and commitment to building an inclusive community that enables our members to authentically show up and contribute to the success, growth, and impact of our field. In May, we collectively issued a statement highlighting our contributions to society and seeking to build public support for and trust in higher education, science, and the environment – 275 of us signed that statement, and many more have helped share the message.

I began writing this letter two weeks after returning from the 2025 AEESP Research and Education Conference at Duke University. On behalf of AEESP and the more than 1000 attendees, let me thank Conference Chair Helen Hsu-Kim, Co-Chairs Leanne Gilbertson and Mark Wiesner, and the rest of the Organizing Committee one more time for their extraordinary efforts to host our largest ever conference. We needed to spend this time together. We needed to be part of something bigger than ourselves. We needed to hear that our work matters. We needed help getting back up after taking so many punches over the past few months. We needed to be in someone else's corner to help them tackle the uncertainties of tomorrow. We needed to face our challenges with integrity, authenticity, and fearlessness. And, we did. The conference was a wonderful manifestation of our vision of AEESP as "a collaborative, supportive, and diverse community of researchers and educators that advances the professional development of its members to be successful innovators and leaders in creating equitable solutions to regional, national, and global environmental challenges".

When I reflect on how we've responded to recent challenges, I do so with pride. We've taken punches but kept moving forward in a manner that showcases the resilience of our community, and we've achieved a lot. Since this is my last President's Letter, I wanted to share some updates of our progress over the past ten months. Below, I map our accomplishments to the 2021 AEESP Strategic Plan led by Joel Ducoste (North Carolina State University). The Strategic Plan had three Key Themes: (1) developing academic networks and career skills; (2) growing the impact of members' scholarship and creative expres-

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The AEESP Newsletter is published three times a year in February, July, and October by the Association of Environmental Engineering and Science Professors. Issues are published online at:

www.aeesp.org/news/newsletter-archive

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AEESP Membership Application:

www.aeesp.org/membership

President's Letter (cont.)

sion; and (3) increasing the environmental engineering and science workforce.

Communities of Practice. This initiative was designed to empower AEESP members to share their knowledge with each other, learn together, and develop products to be shared with the rest of the Association. The outcomes are meant to help us achieve the goal of Key Theme 1: *to share our collective career knowledge and life experiences throughout our membership*. Four Communities of Practice have been formally announced, but several others have been approved. I expect that we'll have at least seven Communities formed by the end of summer. The current Communities of Practice are focused on (1) improving grant-writing skills and making the proposal writing process less intimidating (led by Syeed Iskander, North Dakota State University), (2) translating wastewater-based epidemiology research into public health action (led by Tahmina Ahmed, University of Notre Dame), (3) promoting environmental research to broad audiences via social media (led by Asad Bin Zaman, Kansas State University), and (4) sharing best practices and course materials for teaching engineering design (led by Susan Masten, Michigan State University). This initiative will continue into next year, so please consider forming your own Community! More details are available at https://aeesp.org/initiatives/communities-practice.

AEESP Experts. Some of the challenges that we're facing today stem from the lack of public trust in higher education and research. The AEESP Experts program was designed to (i) increase the visibility of environmental engineering and science to the general public and (ii) build recognition of AEESP members' knowledge and expertise by facilitating more opportunities for media engagement. These activities will help us achieve the goal of Key Theme 2: *to develop resources for membership to effectively communicate their creative expression to our stakeholders and communities*. We currently have 115 registered Experts. So far, our Experts have connected with six reporters on stories related to microplastics, small water and sewer systems, water infrastructure, PFAS contamination, groundwater availability, and climate data. We need to keep building on this momentum, so please share the following website with reporters and journalists in your network: https://aeesp.org/initiatives/aeesp-experts-program. I would like to acknowledge Syeed Iskander (North Dakota State University) and Yang Yang (Clarkson University) for their efforts to lead the AEESP Experts program.

Telling our Story. After serving on the Board for four years, I know all of the good work that happens through our standing committees. That work includes the Faculty Mentoring Program (Membership and Demographics Committee, Key Theme 1), Academic Job Application Review Program (Student and Postdoc Services Committee, Key Theme 1), Spotlight articles (Publications Committee, Key Theme 2), our growing social media presence (Internet Resources Committee, Key Theme 2), webinars on assessment and belonging in environmental engineering (Education Committee, Key Theme 3), and so much more. To help us achieve the goal of Key Theme 3, *to increase our reach to those currently not participating in the development of innovative solutions in EES*, we've been working hard to amplify the activities and impact of our standing committees via LinkedIn. Those efforts have led to heightened visibility, new members, and greater engagement. I hope you will continue to use #AEESP and follow the AEESP LinkedIn group, which now has over 2460 members, to ensure the sustainability of our communication and engagement efforts into the future. By September, I want to grow the group to over 3000 members to expand our reach and impact.

Growing the Membership. We're at an all-time high – 1444 members! New members are drawn to our wonderful community and the opportunities for professional

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President's Letter (cont.)

networking, service, and development. We need your help to keep promoting AEESP and recruiting new members by sharing the benefits of being involved with this amazing Association. By September, I want to surpass 1500 members for the first time – let's make it happen! This year, we've also added eight Sustaining Members. The keys to this success were developing, refining, and sending our value proposition to the right contacts at environmental consulting firms and companies. Several of the new Sustaining Members joined because of the recruitment benefits associated with AEESP's expansive reach to environmental engineering students, but others were interested in forming new research partnerships with our faculty members. By September, I want to add at least two more Sustaining Members to help ensure our success with Key Theme 3's emphasis on preparing the environmental workforce and Key Theme 2's goal of strengthening partnerships with industry. If you have contacts at consulting firms or other environmental companies, please share them with me (blaney@umbc.edu). I will reach out, send our value proposition, and pitch sustaining membership in AEESP.

Updated Processes. The 2021 Strategic Plan also had a crosscutting goal of reviewing and improving our organizational structure. The Board of Directors put a lot of effort into improving our internal processes this year. We constructed a committee dashboard to track monthly progress on the 50+ activities of our standing committees and facilitate multi-committee collaboration on certain tasks. We ensured that committee chairs received comprehensive feedback on their quarterly reports to overcome barriers and maintain progress. We worked with the Internet Resources Committee to move the listserv to a more flexible, adaptable, and easier-to-use system. We developed a webinar program for Sustaining Members, which will debut this fall and provide new opportunities for our members. We completed a very comprehensive revision of the 136-page AEESP Administrative Handbook to (i) align this important resource with current practice, policies, and procedures, (ii) update broken links to the old website (pre-2022) with active links to the new website and AEESP Google Drive (post-2022), and (iii) improve the utility of the Handbook as an active, navigable document. We're continuing to improve our policies, procedures, and documentation to ensure smooth leadership transitions each year.

Fulfilling my Promise. In my first President's Letter, I told you that I will donate $50 to the AEESP Master's Thesis Awards for every article informed by an AEESP Expert and $100 to the *AEESP Award for Outstanding Teaching in Environmental Engineering & Science* for every Community of Practice that is established. By my count, I have $300 and $400 donations to make to those awards, but I'm going to keep the accounts open until Giving Tuesday (December 2, 2025). Let's work together to add a few more articles and form some more Communities! My goal is to reach at least 10 articles and eight Communities of Practice for minimum donations of $500 and $800, respectively. I'll provide an update at the end of November and invite you to join me in supporting our Awards programs.

Before signing off, I want to thank the 2024-25 Board members for their diligence, perspective, and support over this past year: President-Elect Kara Nelson; Vice President José Cerrato; Treasurer Donna Fennell; Secretary Huichun (Judy) Zhang; CTO Claudia Gunsch; CIO Belinda Sturm; and Directors Randi Brazeau, Andrew Jackson, and Lindsay Soh. It's been a real privilege to work with each of you, and I'm proud of what we accomplished together!

While we achieved a lot this year, there's still much to do. We continue to face grave threats to our diverse, international community of scholars, research funding, academic freedom, and public trust in science. We won't overcome those challenges in one round. Many people forget, but Rocky loses in the first movie...however, his goal wasn't to win, it was to remain standing after the full 15 rounds. We've taken a lot of punches this year, but we're still standing. We'll continue to face our challenges with grit, we'll continue lifting each other up, we'll continue to persevere, and we will win.

It's been an honor to serve as your president.

Lee Blaney
2024-25 AEESP President

Did You Know?

Do you work for a company that hires environmental engineers or scientists? If so, the *best* way to recruit new employees is to post your ads to the #AEESP Jobs Page (https://aeesp.org/jobs). For minimal effort and cost, your ad will reach essentially every environmental engineering program in North America. Because our 1400+ members regularly forward job ads to their undergraduate and graduate listservs, you'll be able to reach the entire market. Submit your job today.

AEESP Sustaining Members receive one free job ad, automatically saving $150 and activating additional benefits.

AEESP Board of Directors Meeting Report (May 2025)

By José M. Cerrato Corrales, AEESP Vice President, University of New Mexico

The Board of Directors met on May 23, 2025 at Duke University and was energized by the wonderful AEESP Conference in Durham, North Carolina! Special thanks to the Organizing Committee led by Helen Hsu-Kim, Leanne Gilbertson and Mark Wiesner, and the contributions of various students, staff, and colleagues from Duke University for organizing an incredibly successful conference attended by over 1,000 registrants, what a celebration! Helen joined the Board of Directors meeting to reflect on relevant insights and recommendations to adequately organize and plan the next AEESP Conference considering the institutional knowledge of previous hosts, recommending more logistical support for hosts given the growing number of attendees over the years. The support from the University of North Carolina, North Carolina State University, and University of North Carolina Charlotte was also essential for supporting various aspects of the conference and its fascinating sessions!

The Board of Directors was honored with the participation of Venkataramana (Ramana) Gadhamshetty, who transitioned in as Editor-in-Chief of Environmental Engineering Science (EES), official journal of AEESP, after the excellent leadership of Catherine Peters since 2019. As Editor-in-Chief, he discussed different ideas to strengthen the impact and visibility of the journal through the strategic partnership between EES and AEESP. He is restructuring the editorial board to include three Senior Associate Editors and five Associate Editors in addition to himself as Editor-in-Chief. To complete this restructuring, he will send a Call for Nominations via the AEESP Listserv. Thus, we will appreciate the support of our members responding to this call!

Brian Schorr (Executive Administrator) provided the Business Office Report sharing that the total number of AEESP members increased to 1417. The number of Sustaining Members also increased to 16 thanks to the strategic leadership of President Lee Blaney! The new or returning Sustaining Members include Black & Veatch, Geosyntec, Haley & Aldrich, Kennedy Jenks, OLI Systems, Regenesis, and Stantec. This is a remarkable accomplishment that represents an important opportunity for the connection of AEESP with industry, professional organizations, equipment manufacturers and other relevant partners enriching our community. We are working with OLI Systems and Regenesis to host targeted webinars for AEESP members in the fall – stay tuned!

Donna Fennell (Treasurer) provided the Treasurer's Report discussing various action items and initiatives. She has met with the AEESP Foundation Investment Oversight Committee and participated in a meeting with the AEESP Foundation to ensure adequate coordination. The finances of AEESP are in excellent standing due to the increase in the number of memberships, Sustaining Members, and job postings. Therefore, AEESP has the capacity to support awards, grants, and other initiatives to benefit our community. Recruitment of new members and Sustaining members is an important priority that we hope our community can actively support for the long-term sustainability of AEESP.

Huichun (Judy) Zhang (Secretary) reported the AEESP 2025 Election outcomes, indicating that a total of 242 votes were cast out of a total eligible number of 854 for a voting rate of 28.3%. We are excited to welcome our new Board members, Nirupam Aich (University of Nebraska-Lincoln), Elizabeth Edwards (University of Toronto), and David Ladner (Clemson University). We sincerely thank Anu Ramasmawi (Princeton University), Lucia Rodriguez-Freire (Newcastle University), and Fabrizio Sabba (Syracuse University) for their contributions to AEESP and look forward to continued collaborations. Nirupam joined the Board of Directors meeting to share his excitement for this new role and his experience in his past roles in AEESP as Chair of Internet Resources and Vice Chair of the Student and Postdoc Services Committee. The new Board members will be officially seated during our September meeting.

The Board of Directors reflected on the AEESP Statement in Support of Clean Water, Air, Food, and Communities which was widely shared in social media, sent to 123 reporters from the AEESP Experts Reporters Database, and promoted ahead of the Conference. The Board also discussed the "Call to Action" initiative led by the AEESP Government Affairs Committee representing an important opportunity to advocate for our field. The AEESP Government Affairs Committee reached out to our AEESP listserv on June 2, 2025 encouraging our members to contact their Senators and Representatives to advocate for our field. These actions are highly supported by the Board of Directors as we continue working with our AEESP members and other organizations to identify actions and ideas to support our Environmental Engineering and Science community.

President Lee Blaney reported on the initiatives for AEESP Communities of Practice and Experts programs. Three Communities of Practice have been initiated: 1) Grantastic! (led

Board of Directors Meeting Report (cont.)

by Syeed Iskander, North Dakota State University); 2) Research Translation through Wastewater-Based Epidemiology (led by Tahmina Ahmed, University of Notre Dame); and 3) Voices of AEESP (led by Asad Bin Zaman, Kansas State University). Several other AEESP Communities of Practice have been approved and should begin accepting applications in the coming weeks. President Blaney is currently working on a website that specifies the outputs and products to encourage the creation of more Communities of Practice. The Experts Program has now 112 members and a new webpage will be created that describes the AEESP Experts Program and links to the corresponding articles that include quotes from experts.

President-Elect Kara Nelson held a planning session to consider ideas that could provide direction for next year. The Board of Directors provided feedback to make sure that ongoing initiatives can be sustained and new educational activities can be developed. The Board of Directors discussed in detail action items for the different AEESP Committee reports which will be assessed in the next meeting which will take place at Case Western Reserve University in Cleveland, Ohio in early September 2025.

The Board of Directors sincerely thank Professor Lynn Katz from the University of Texas at Austin for a successful AEESP 2024-2025 Distinguished Lecturer Series, where she visited 24 host institutions across North America, Europe and Australia. We are honored to announce that Professor David Sedlak from University of California, Berkeley has been selected as the AEESP 2025-2026 Distinguished Lecturer.

We are thrilled to serve our AEESP family and will continue engaging with each of you as we continue to strengthen and build together the future of AEESP!

Respectfully reported by José Cerrato.

Left to Right: W. Andrew Jackson, Donna Fennell, José Cerrato, Lee Blaney, Randi Brazeau, Kara Nelson, Brian Schorr, Belinda Sturm, Lindsay Soh (Not pictured: Claudia Gunsch, Judy Zhang)

AEESP Education Committee: Advancing Pedagogy and Collaboration Across the Community

Submitted by the AEESP Education Committee

The AEESP Education Committee has been active this year, continuing to promote innovation, collaboration, and inclusion in environmental engineering and science education.

One of the committee's top priorities remains the development of shared educational resources. Survey responses highlighted a strong interest in creating a database of adaptable classroom activities, real-world examples from AEESP faculty courses, and assignments aligned with the new Body of Knowledge. The committee is also exploring avenues to provide DOIs for teaching materials and to collaborate with the Publications Committee on sharing peer-reviewed educational content.

The committee is also updating the Environmental Engineering Laboratory Manual in collaboration with the Environmental Engineering Program Leaders Committee. Members have volunteered to review the lab handouts, including those on sampling and monitoring, chemical and biological processes, general material, and design applications. The group is also exploring whether individual lab handouts can be published with DOIs to increase accessibility and scholarly recognition.

Webinars continue to be a cornerstone of the committee's outreach. Recent sessions included:

- **Effective Assessment of ABET Outcomes** (Feb 28): 77 registrants, 41 attendees, 67 YouTube views as of June 10, 2025
- **Fostering a Sense of Belonging in EES Education** (March 28): 57 registrants, 32 attendees.
- **Incorporating AI into the Curriculum** (May 9): 112 registrants, 60 attendees, 220 YouTube views as of June 10, 2025.

The first and third webinars were recorded and are available on the AEESP YouTube channel.

Looking ahead to 2025–2026, the committee will host four webinars:

- **Sept. 26** – *Teaching Engineers to Think Globally*, led by Kevin Orner and Stephanie Laughton.
- **Nov. 7 or 14** – *Scholarship of Teaching and Learning (SoTL)*, led by Xinyu Zhang and Matt Landsman.
- **Feb. 6** – *Sustainability in EES Education*, led by Lindsey Payne and Susan Masten.
- A spring webinar focused on AI or the revised Body of Knowledge is also being considered.

There is growing interest in broadening the committee's engagement, including adding student representatives and promoting equity and diversity in STEM. The committee is also looking into best practices for teaching capstone design, developing intercultural competency, and facilitating global learning experiences.

As the committee looks toward the 2025–2026 academic year, it continues to welcome new volunteers and ideas. Those interested in chairing or co-chairing the committee or contributing to ongoing initiatives are encouraged to reach out.

For more information or to access resources and webinar recordings, visit the AEESP YouTube channel and committee webpages or contact Co-chairs Pablo Cornejo (pcornejo-warner@csuchico.edu) or Susan Masten (masten@msu.edu).

Save the Date and Join Us for a Special AEESP Webinar!

Academic-Industrial Partners:
Cultivating Mutually Beneficial Research Relationships

Paul Erickson, Ph.D.
Vice President of R&D
REGENESIS Bioremediation

Wednesday, September 24; 1 pm ET / 10 am PT

Moderated by Incoming AEESP President Kara Nelson, Ph.D.

Hosted by AEESP's new Sustaining Member REGENESIS. Additional details and registration coming soon!

REGENESIS

AEESP Environmental Engineering Processes Laboratory Manual Now Freely Available - Revisions Unverway!

Submitted by the AEESP Education Committee and Environmental Engineering Program Leaders (EEPL)

The AEESP Environmental Engineering Processes Laboratory Manual, published in 2001, is now freely available to the environmental engineering community. You can access the manual and supporting materials here.

The manual has had a lasting impact on environmental engineering education over the past two decades. We are deeply grateful to the original editors and contributors, Susan Powers, Jim Bisogni, Joel Burken, and Krishna Pagilla, for their leadership and vision.

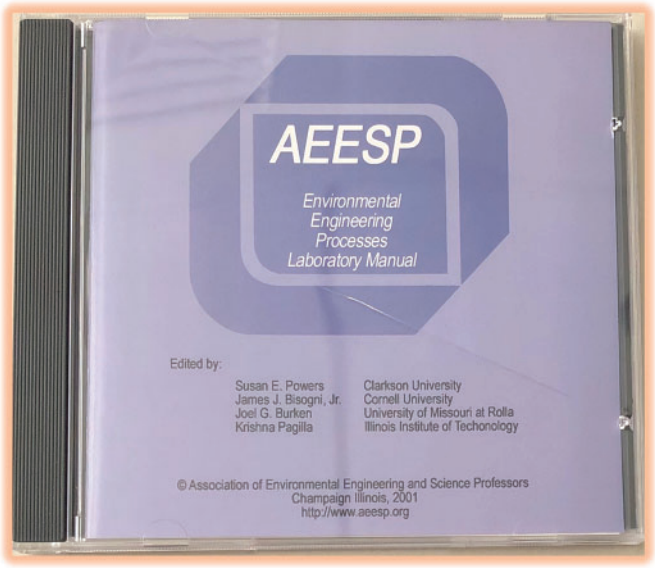
The original release was featured in the September 2001 AEESP Newsletter, which described the effort as part of a broader initiative to update AEESP's teaching resources.

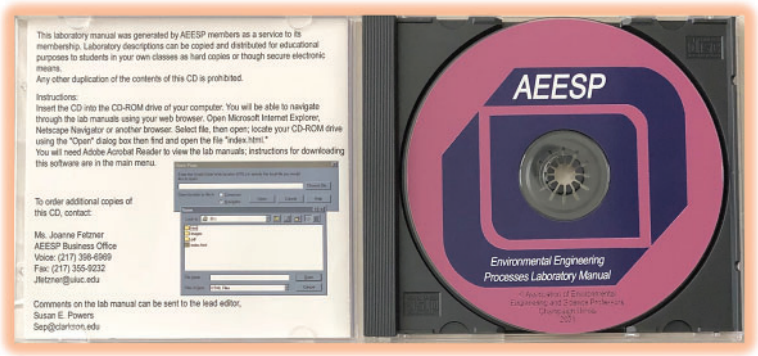
That article noted:
"The Environmental Engineering Processes Laboratory Manual contains 32 new labs, many of which contain several parts, as well as four 'classic' laboratories from the 1988 AEESP Unit Operations Laboratory Manual."

AEESP is now launching a new effort to revise and modernize this important teaching resource. This initiative is being led jointly by the AEESP Education Committee (Susan Masten, Chair) and the EEPL committee (Kurt Pennell, Chair).

We invite members of the AEESP community to contribute to this effort. Whether you have developed innovative lab exercises, updated existing materials, or would like to collaborate in reviewing and enhancing the current content, we welcome your participation. Please let us know how you'd like to be involved by completing this short survey.

P.S. Does anyone else remember how cool the 2001 CD-ROM version looked?





Help the AEESP Foundation Reach Our Award Endowment Targets!

By Dr. Shannon Bartelt-Hunt, AEESP Foundation Chair, University of Nebraska-Lincoln

As many of you are aware, the AEESP Foundation supports a number of important professional awards for students and faculty. Now, more than ever, it is important for us to recognize and reward excellence in the environmental engineering and science community. Several of the AEESP Foundation awards are fully endowed meaning funding for these awards is provided in perpetuity. However, there are other AEESP awards that are not fully endowed including the:

- AEESP Master's Thesis Award
- AEESP Outstanding Contribution to Environmental Engineering and Science Education
- AEESP Award for Outstanding Teaching in Environmental Engineering and Science
- AEESP Outstanding Publication Award
- Walter J. Weber, Jr. AEESP Frontier in Research Award
- Steven K. Dentel Award for Global Outreach

The AEESP Foundation Board is seeking motivated individuals from the AEESP community interested in forming an *ad hoc* group to champion the full endowment of as many of these awards as possible. We hope to ensure these awards can be given to future generations of environmental engineers and scientists to recognize excellence within our profession.

If you are interested in working with our board to endow these awards, please contact Shannon Bartelt-Hunt at sbartelt@unl.edu. Alternatively, if you would like to give to support the AEESP Foundation's activities, which includes AEESP awards, the Distinguished Lecture series, and the AEESP Foundation Grant Program, please consider making a gift at https://aeespfoundation.org/donate.

Get Involved In AEESP's Communities of Practice!

Remember those awesome ideas that came up during the #AEESP2025 Conference? Why not turn them into a #AEESP Community of Practice?

We're accepting applications for new Communities. You can find more information, including the application form, here.

So far, four Communities of Practice have gone live:

1. **Grantastic!** (led by Syeed Md Iskander, Ph.D., PE, BCEE, North Dakota State University)
2. **Research Translation through Wastewater-Based Epidemiology** (led by Tahmina Ahmed, Ph.D., University of Notre Dame)
3. **Voices of AEESP** (led by Asad Bin Zaman, Kansas State University)
4. **Teaching Engineering Designs** (led by Susan Masten, Ph.D., PE, BCEE, F.AEESP, Michigan State University)

Several other Communities have been approved, and the details should be coming through the listserv soon. We're so excited to share the products of these Communities with the greater AEESP membership, and we expect that many of the activities initiated through this program will get incorporated into our standing committees - growing the impact!

AEESP

ASSOCIATION *of* ENVIRONMENTAL ENGINEERING *and* SCIENCE PROFESSORS

Communities of Practice

AEESP Student and Postdoc Services Committee (SPSC) Report

By Dr. Fabrizio Sabba, Black and Veatch, Chair, Student and Postdoc Services Committee

The AEESP Student and Postdoc Services Committee (SPSC) is dedicated to supporting Environmental Engineering and Science students and postdoctoral scholars as they prepare for the next stages of their careers. Our programming focuses on both academic and non-academic career development through a variety of initiatives.

We regularly organize career workshops—both virtual and in-person—to help students and postdocs explore diverse career paths and strengthen their job application and interview skills. One of our key programs, the **Academic Job Application Review (AJAR)**, pairs graduate students and postdocs interested in academic careers with faculty mentors who provide personalized feedback on application materials and insights into the faculty hiring process.

The **AEESP Future Faculty Seminar Series** celebrates and highlights senior PhD students and postdoctoral researchers in environmental engineering and science, focusing on individuals representing diverse backgrounds. Candidates are competitively selected from the pool of AJAR applicants. Participants engage in mock search committee meetings, deliver seminars, and complete mock interviews with senior faculty—providing valuable preparation for academic job searches.

To enhance networking opportunities for graduate students and postdoctoral scholars interested in careers at national labs, consulting, government positions, and entrepreneurship, the AEESP SPSC organizes the online seminar series, "**Navigating Jobs After Grad School**." This series helps MS and PhD students, as well as postdoctoral researchers, explore various career paths in environmental engineering and science and learn about the next steps after graduate school.

Over recent years, we have also organized several large **Career Workshops** at different AEESP conferences, designed to support graduate students and postdoctoral scholars in exploring diverse career opportunities. These events provide attendees with opportunities to learn about different career paths and develop skills to succeed in job searches and interviews. Graduate students hear directly from diverse panels of professionals representing academia, industry, national laboratories, and government agencies, offering valuable insights into potential career trajectories.

This year's career workshop at Duke University saw a record-breaking attendance of 350 participants. This milestone reflects the dedication and enthusiasm of our entire committee and community. We sincerely thank all our members and volunteers for their ongoing support in advancing the careers of our students and postdocs.

AEESP Thanks Professor Andrew Whelton for Serving as This Year's AEESP Lecturer at AWWA-ACE25!

AEESP would like to extend our thanks and appreciation to Dr. Andrew Whelton, Professor of Civil and Environmental Engineering at Purdue University, for serving as AEESP Lecturer at this year's American Water Works Association Annual Conference and Exposition (AWWA-ACE). Dr. Whelton's presentation was "*Transforming Community Resilience with Partnerships and Strategy: Research for Impact*", and was presented during a plenary session on Monday, June 9.

The lecture was moderated by Dr. Sheldon Masters, Assistant Professor of Civil and Environmental Engineeing at University of Colorado Boulder, and he also provided Dr. Whelton's introduction.

AEESP greatly thanks Sustaining Member **Hazen** for sponsoring Dr. Whelton's lecture and Sustaining Member **AWWA** for hosting it.

American Water Works Association

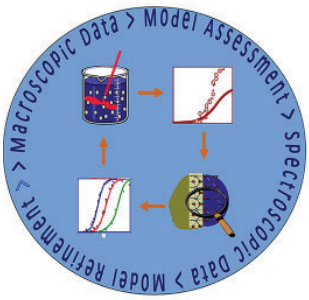
Hazen

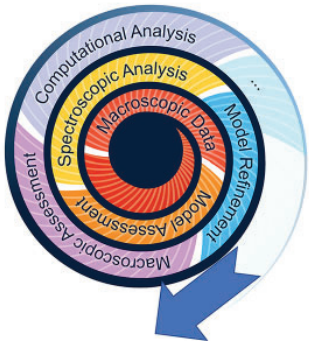
Reflections on an AEESP Journey

By Dr. Lynn E. Katz, 2024-2025 AEESP Distinguished Lecturer, The Univerity of Texas at Austin

The honor to serve as the AEESP Distinguished Lecturer this past year has been the most exhilarating and humbling experience of my career. Like most opportunities I have had as an environmental engineer and academician, my life has been enriched by the experience. I want to thank my colleagues who nominated me and encouraged me to apply. When they first approached me, I wondered if I had a message worthy of sharing with our broad community. After all, how exciting is research on metal ion chemistry and sorption processes, topics that have been studied for decades and decades? Apologies to those of you who have shared my passion for these topics (and often feel like the Rodney Dangerfield of environmental engineering), while being tempted by alluring fields such as microplastics, metagenomics, electrochemical treatment, nutrient recovery, indoor air, wildfires, and PFAS. I, too, have strayed with no regrets. But preparing the abstracts helped me realize that synthesizing and showcasing the outstanding work of my current and former students was not just an extraordinary privilege; it was the perfect way to honor their research contributions and dedication to advancing our understanding of metal ion processes.

Kasey Faust, a UT colleague, led me to the field of rural community water infrastructure systems (WIS) through a sociotechnical systems lens, brought me into a project examining the challenges of delivering water to rural, isolated communities, and provided me with the theme for the first abstract that I wanted to share with our community: "*Drinking Water Quality in Alaska: Addressing Socioeconomic Challenges from Molecular Level Insights.*" The message that I hope resonated with the universities/consortia where I presented this talk is that many areas, even in the U.S., lack access to safe drinking water. Our ability to address this problem requires an understanding of fundamental environmental engineering science, as well as system-of-systems approaches that integrate strategies such as legitimacy theory with co-designed, resilient water infrastructure systems.





The second abstract, "*Translating Molecular Science to Practical Application in Natural Systems and Engineered Processes*," explored many of the same themes but originated from a figure that I created when I first began my journey in surface complexation modeling. I originally envisioned research to advance predictive modeling of metal ion sorption in a circular process where macroscopic data are collected to evaluate models, and spectroscopy and molecular-level tools provide insights to refine those models. These models are then applied to predict contaminant fate and transport in natural systems

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AEESP Thanks Professor Andrea Ferro for Serving as This Year's AEESP Lecturer at A&WMA ACE 2025!

On June 10, 2025, Dr. Andrea Ferro, Professor of Civil and Environmental Engineering at Clarkson University, provided the AEESP/A&WMA Joint Lecture at this year's Air & Waste Management Association's Annual Conference & Exposition. Dr. Ferro's presentation was "*Engaging Communities in Scientific Discovery and Innovation to address Environmental Grand Challenges*".

The lecture was co-chaired by Dr. Hannah Rubin, Environmental Modeler at Stone Environmental, and Dr. Joshua Fu, Professor of Civil and Environmental Engineering at the University of Tennessee Knoxville. A Q&A session was held following Dr. Ferro's lecture.

AEESP expresses our gratitude to Dr. Ferro for providing this year's lecture at A&WMA ACE 2025, Drs. Rubin and Fu for co-chairing the session, and the **Air & Waste Management Association** for hosting it.

Dr. Andrea Ferro pictured with Dr. Joshua Fu.

AIR & WASTE MANAGEMENT ASSOCIATION

Reflections on an AEESP Journey (cont.)

and to enhance the design of engineered systems. The cycle repeats as we examine more complex systems. As I prepared this talk, I realized that this image failed to convey the message I was developing; it occurred to me that we don't do research to spin in circles, but to advance science for practical application. I changed my circle to a spiral where, at every cycle, we advance knowledge, and at any point, we can emerge from a cycle and apply our work to the field. Having had the opportunity to examine legacy impacts of metals and to be involved in developing membranes for metal ion separation, I chose mining as the topic for demonstrating application. The preparation for this talk also allowed me to ponder the question of why I have continued to study metals throughout my career, and PFAS gave me the answer. Metals are the true forever chemicals; the toxicity associated with exposure to many metals is well-known. Their use and production continue to grow, and their mining and legacy contamination issues are at the forefront of social injustice. The need for their greater recovery is both imminent and immense.

When I received the news that I was selected to serve as the AEESP distinguished lecturer, I quickly realized I had no idea how much work it would take to organize the lecture series. Joshua Fu, the chair of the Distinguished Lecturers Committee, worked with all institutions to coordinate the schedule, accommodating requests from the schools and my schedule. It was an impressive feat. Thank you, Joshua, all of the Distinguished Lecturers Committee members, and, of course, Brian Schorr, who is the lifeblood of AEESP. This is an overwhelming task for the volunteers, and you were incredibly organized and responsive. Organizing each site visit also took significant time and patience. I would like to thank all the hosts who helped coordinate travel arrangements, organized the site agenda, and welcomed me to campus. Joe Brown, Xing Xie, Sara Behdad, Eric Seagren, Shane Walker, Sungmin Youn, Jianpeng Zhou, Kaoru Ikuma, Alan Stone, Greg Lowry, Anita Hill, Vinicius Abud Louro, Mark Krzmarzick, Lut Raskin, Josh Sharp, Lauren Stadler, John Fortner, Emily Kumpel, Yinyin Ye, Haoran Wei, Boya Xiong, Terry Baxter, Kris McNeil, and Thomas Hofstetter — thank you for introducing me to your community and providing me with opportunities to meet with students, post-docs and faculty to share science, discuss educational philosophies, and foster camaraderie.

I also want to thank all of the students, faculty, staff, research scientists, and post-docs who attended my lecture, took time to meet with me, presented posters, helped make arrangements, or offered me a glass of water. From the moment I arrived on each campus to the moment I put my head on the pillow at the end of the trip, I felt welcomed and inspired by the community. The discussions I had with new students and professors who had just begun their journey, seasoned graduate students whose passion for their ideas emanated from the light in their eyes, and emeritus professors whose brilliant insights connecting our past science to our field's future were inspiring. I was surprised when I was asked if I was getting weary from the hectic schedule of each visit; on the contrary, each interaction, each meeting, and each intellectual engagement was invigorating. How often do we as faculty have an opportunity to spend all day exploring research questions and debating pedagogical methods? I submit that we need more time for these endeavors! The sense of pride I felt being part of this amazing community will be one of the most remarkable memories I take away from this adventure.

When I began my career in environmental engineering decades ago, our field looked quite different. We were a more homogeneous community, both in terms of who we were and what we studied. Much of our research centered on groundwater contamination and remediation, traditional water and wastewater treatment processes, and air pollution control. Superfund priorities dominated the regulatory landscape; hazardous waste, including metals, chlorinated solvents, PCBs, and other legacy contaminants, defined our research agenda. Our analytical tools often limited us, as we observed phenomena without fully understanding the underlying mechanisms.

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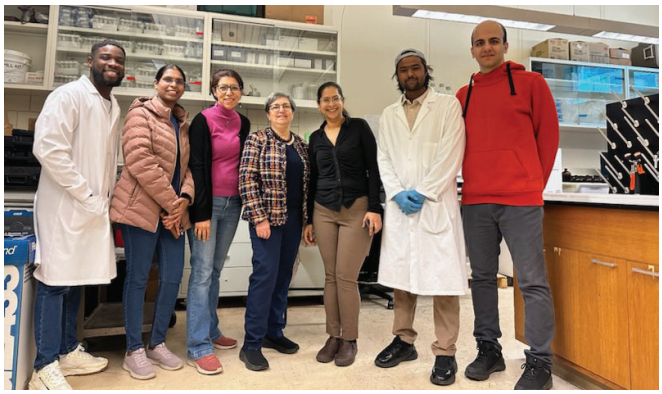
Reflections on an AEESP Journey (cont.)

As I witnessed the changes in our field during these campus visits, I noted the remarkable transformation. Our student bodies and faculty reflect a diversity that enriches every conversation and collaboration. But perhaps even more exciting is how we've expanded intellectually. We've become genuinely interdisciplinary, seamlessly integrating insights from social sciences and policy, leveraging tools from big data and artificial intelligence (which has even led to a reemergence of the use of the em dash). We employ molecular dynamics simulations and advanced molecular characterization techniques, and incorporate microbiome research. Our focus has shifted to an entirely new generation of challenges, including pharmaceuticals, microplastics, viruses, and emerging contaminants, which require a broader and more sophisticated toolkit.

Of course, no adventure of this magnitude comes without its casualties. Along my globe-trotting journey, I managed to leave a trail of personal belongings across multiple continents: water bottles (the irony was not lost on this water chemist), power adapters, hats, pants, laser pointers, and, quite possibly, my composure when, during an animated lecture, my watch loudly asked if I had just had a serious fall. Each location offered its memorable highlights, including Wisconsin's exceptional ice cream; Colorado School of Mines' perfectly timed snowstorm; the folks at UNC who insisted I declare them my favorite school (you know who you are!); Switzerland's breathtaking alpine backdrop; and Australia's intense schedule where I gave talks in three cities (Melbourne, Adelaide and Perth) over four days, flew around the town and off to a winery where we landed on a grass airstrip and enjoyed lunch, sailing in Melbourne, and attending my first cricket match, all within a week and a half. The poster sessions created particularly vibrant atmospheres, bringing together faculty and students from multiple institutions for rich cross-pollination of ideas.

At many universities, I had the joy of reconnecting with longtime colleagues (many of whom I met through AEESP), catching up with former students, and meeting my academic grandchildren and great-grandchildren; how quickly time passes! I had the opportunity to return to each of my alma maters (University of Michigan and Johns Hopkins University), and I was touched by the turnout from UT students and faculty who traveled to Rice to see my presentation. The AEESP community often feels like family, and this journey reinforced those bonds.

The student group meetings were the highlight of each visit. During the fall, some students expressed trepidation about the upcoming election; by spring, students were concerned and anxious about their funding and career pros-



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Reflections on an AEESP Journey (cont.)

pects. Yet what struck me profoundly was their unwavering commitment to our profession. These conversations sent a clear message to me: as senior faculty, our leadership and mentorship have never been more crucial, and we have a responsibility to guide and support the next generation through these uncertain times.

Not surprisingly, when I arrived at the AEESP Conference at Duke after just returning from Switzerland, that leadership shone through. The atmosphere was electric with intellectual energy and collegial support. Despite the challenges and uncertainties our field faces, our community demonstrated precisely the kind of resilience and collaborative spirit that gives me tremendous hope for the future. Seeing hundreds of environmental engineers and scientists — from first-year graduate students presenting their initial research to emeritus professors sharing decades of wisdom — all gathered in one place, engaged in passionate discussions about solving the world's most pressing environmental challenges, reminded me why I fell in love with this field in the first place. The conference, as well as the entire lectureship experience, felt like a celebration of not just where we've been, but where we're boldly heading together.

2025 AEESP Award Recipients

Dr. Thanh H. (Helen) Nguyen, AEESP Awards Committee Chair, University of Illinois at Urbana-Champaign

Dear AEESP members:

This is my third and final year overseeing the award nominations and review process for AEESP and the joint AEESP/AAEES awards. Throughout my term as Chair of the AEESP Awards Committee, we have standardized and simplified the nomination package so that it is accessible to all members of AEESP. Moving forward, all nomination packages will have the same format. The supporting materials will be limited to 10 pages. We will set nomination deadlines each year to allow the committees sufficient time to carefully review the ever-growing numbers of submissions. AEESP's submission webpages will report these deadlines annually. We will send notifications this autumn for the 2026 nomination award cycle via the AEESP Listserv and the October Newsletter.

I would like to thank all nominators and letter writers who have put so much effort into preparing last year's nominations. Twenty-two Awards Committee Members – Helen Nguyen, Jason Ren, Amy Stuart, Shankar Chellam, Dave Cwiertny, Ray Hozalski, Hector Fuentes, Ramesh Goel, Detleft Knappe, Amy Pruden, Ian Bradley, Aleksandra Szczuka, Katy Graham, Samendra Sherchan, Haoran Wei, Devrim Kaya, Mike Dodd, Antar Jutla, Chan Lan Chun, Kerry Hamilton, Zoe Li, and Ellison Carter – are especially acknowledged for their thoughtful and careful review of all nominations. Their support and ideas for improving the nomination process were invaluable. A special 'thank you' also goes to Michael Dodd, Chair of the Outstanding Doctoral Dissertation Awards Subcommittee, and Ian Bradley, Chair of the Master's Thesis Awards Subcommittee. This is my third and last time overseeing the award selection process. It is very time-consuming and hard work. I am proud of the award committee's work in selecting deserving colleagues who represent the best of our society. We have worked on reducing biases in the submission and selection process. The list of awardees reflects our work. I am honored and grateful for this opportunity to serve AEESP. I would also like to congratulate and welcome Amy Stuart as AEESP's next Awards Committee Chair. AEESP is in good hands with her leadership on this Committee. If you are interested in serving on the Awards Committee, please reach out to Amy (als@usf.edu) for more information.

Finally, congratulations to all this year's winners. Very well deserved and, in some cases, way overdue.

Education, Research, and Practice Awards:

Steven K. Dentel/AEESP Award for Global Outreach: Dr. Mohan Dangi, Distinguished University Professor, California State University, Fresno (*Nominated by Dr. George Tchobanoglous*)

This award is given to Prof. Dangi for his sustained accomplishments in Global Outreach to enhance the health and well-being of individuals through education, collaborations, and program development.

Perry L. McCarty/AEESP Founders' Award: Dr. Paul Westerhoff, Regents Professor, Arizona State University (*Nominated by Dr. Bruce Rittmann*)

Prof. Westerhoff is recognized for sustained leadership in Environmental Engineering research, education, and practice aimed at identifying what pollutants are in water, why they matter, and how they can be addressed.

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Charles R. O'Melia AEESP Distinguished Educator Award:
Dr. David Mays, Associate Professor, University of Colorado Denver
(*Nominated by Dr. Joseph Ryan*)

Prof. Mays is being recognized with this Award for teaching, curriculum development, and indigenous STEM research efforts that are encouraging faculty to include diversity, equity, and inclusivity in environmental engineering education.

AEESP Award for Outstanding Teaching in Environmental Engineering and Science:
Dr. Jennie Saxe, Associate Professor, University of Delaware
(*Nominated by Dr. Dominic Di Toro*)

Prof. Saxe is a talented, multifaceted teacher and mentor, deeply committed to her students' academic and personal growth, and to their professional success.

Walter J. Weber, Jr. AEESP Frontier in Research Award:
Dr. William Mitch, Professor, Stanford University
(*Nominated by Dr. Susan Richardson*)

Prof. Mitch is recognized for advancing the environmental engineering field through leadership and innovative, pioneering efforts to improve the safety of drinking water.

AEESP Outstanding Contribution to Environmental Engineering & Science Education Award:
Dr. Qiong (Jane) Zhang, Professor, University of South Florida
(Nominated by Dr. James Mihelcic)

Prof. Zhang is recognized as a pioneer in environmental engineering and science education through the creation of materials to effectively teach sustainable design and green engineering.

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Outstanding Publication Award:
Drs. Katherine (Trina) McMahon, University of Wisconsin, Héctor García Martín, Lawrence Berkeley National Laboratory, and Phil Hugenholtz, University of Queensland
(*Nominated by Dr. Lutgarde Raskin*; *names in order below*)

For their paper "Metagenomic analysis of two enhanced biological phosphorus removal (EBPR) sludge Communities." *Nature Biotechnology, Vol 24 (10),* 1263-1269 (2006).

The authors are recognized for their pioneering role in introducing metagenomics to water treatment and environmental engineering and improving our understanding of biological phosphorus removal.

Frederick George Pohland Medal 2025 Recipient:
Dr. Zhen (Jason) He, Professor and Associate Chair, Washington University in St. Louis
(*Nominated by Dr. Daniel Giammar*)

Prof. He is being awarded this medal for advancing anaerobic wastewater treatment, resource recovery, and environmental biotechnology in ways that bridge research and practice.

AEESP/Mary Ann Liebert Award for Publication Excellence in *Environmental Engineering Science:*
Drs. Courtney Gardner, Lane Maguire, Jennifer Espin, and Tyler Patrick

(*Names noted above are in clockwise order*)

For their paper "Wildfire Impacts on Soil Microbiomes: Potential for Disruptions to Nitrogen-Cycling Bacteria." *Environmental Engineering Science, Vol 41 (9),* 337-346 (2024).

This award is for the most outstanding 2024 paper published in *Environmental Engineering Science*, the official journal of AEESP. In this paper on wildfire impacts, Courtney Gardner and her team investigated changes to soil microbiomes after the Woolsey Fire in the 2018 Santa Monica Mountains National Recreation Area in California. This study made groundbreaking discoveries of microbial community dynamics with profound implications for ecosystem recovery. The paper is substantial in scope and makes a consequential advancement in the field of environmental science and engineering.

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Student Awards:

AEESP Outstanding Doctoral Dissertation Awards:

The Edward J. Bouwer AEESP Outstanding Doctoral Dissertation Award:
Dr. Bosen Jin, University of California, Riverside
(*Advised by Dr. Yujie Men*)

Dissertation Title: "*Biotransformation and Defluorination of Emerging Per- and Polyfluoroalkyl Substances (PFAS): Structure Specificity, Pathways, and Implications.*"

Dr. Jin's dissertation has four technical chapters comprehensively covering his focused Ph.D. research on the structure-biodegradability relationships of non-legacy per- and polyfluoroalkyl substances (PFAS) and the implications of identified biotransformation/defluorination processes in various environmental engineering applications.

Edward J. Bouwer AEESP Outstanding Doctoral Dissertation Honorable Mention:
Dr. William (Brad) Vass, University of Miami (now at the U.S. Military Academy at West Point)
(*Advised by Dr. Chang-Yu Wu, shown below accepting on Dr. Vass' behalf*)

Dissertation Title: "*Integrating Air Sampling Methodologies to Improve the Collection of Viable Airborne Viruses and Associated Exposure Health Risk Estimations*".

This groundbreaking study was the first in the world to provide solid evidence of viable virus aerosols in residential settings, challenging the mainstream ideas of the time. The findings from these studies challenge the old paradigm of respiratory virus transmission hotspots and are critical for policy setting to better protect public health from airborne pathogens.

Jacobs Engineering Group/AEESP Outstanding Doctoral Dissertation Award:
Dr. Wei Wang, Virginia Tech
(*Advised by Dr. Peter Vikesland*)

Dissertation Title: "*Surface-Enhanced Raman Spectroscopy Enabled Microbial Sensing*".

His dissertation describes innovative technologies for detection of environmentally relevant microorganisms. His work includes at least three seminal contributions relevant to environmental science and engineering:

- Development of SERS biosensors for the quantification of viable viruses and the evaluation of pathogen-host interactions,
- Evaluation of pathogen responses to environmental stresses, and
- Development of a low-cost, on-site, and ultra-sensitive SERS-based lateral flow test for SARS-CoV-2 detection.

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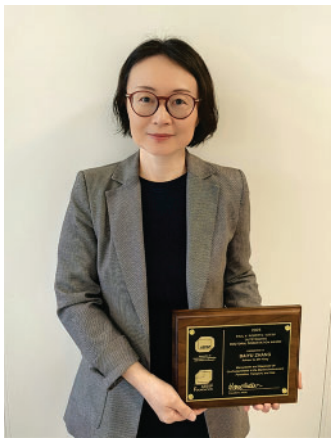
AEESP Outstanding Doctoral Dissertation Awards:

Jacobs Engineering Group/AEESP Outstanding Doctoral Dissertation Honorable Mention:
Dr. Zixuan (Zach) Wang, Washington University in St. Louis (now at University of Illinois at Champaign-Urbana)
(*Advised by Dr. Jason He*)

Dissertation Title: "*Electrochemical Phosphorus Recovery from the Anaerobically Digested Sludge: Mechanism, Performance, Application, and Solids Disposal*".

Dr. Wang's dissertation represents a transformative contribution to wastewater treatment and resource recovery, particularly in phosphorus (P) recovery. He developed innovative electrochemical systems to release and separate P from anaerobically digested sludge (ADS). His research uniquely tackled the challenges of recovering phosphorus from complex waste compositions, addressing critical issues such as product purification and reuse, energy efficiency, and residual waste disposal. His work has resulted in six first authored publications, establishing him as a leading researcher in the field. His contributions lay the groundwork for advancing resource recovery from waste streams.

Paul V. Roberts/AEESP Outstanding Doctoral Dissertation Award:
Dr. Min Yang (*left*), Memorial University of Newfoundland
(*Advisor Dr. Baiyu (Helen) Zhang, right*)



Dissertation Title: "*Microplastic and Dispersed Oil Co-Contaminants in the Marine Environment: Formation, Transport, and Fate*".

Dr. Yang's dissertation made transformative intellectual contributions to advancing the understanding of microplastic (MP) and oil co-contaminants in marine environments. Her Ph.D. research pioneered the discovery of microplastic-oil-dispersant agglomerates (MODAs), providing the first comprehensive framework to elucidate their formation, transport, and fate. Dr. Yang's findings have far-reaching implications for oil spill response operations, contributing to more effective decision-making.

Paul V. Roberts/AEESP Outstanding Doctoral Dissertation Honorable Mention:
Dr. Devashish Gokhale (*left*), MIT (now at University of Illinois at Champaign-Urbana)
(*Advised by Dr. Patrick Doyle, right*)

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Dissertation Title: "*Sustainable Hydrogels for Water Treatment*".

His dissertation resulted in 5 articles for which he was the first author. In all parts of the thesis (and articles) Devashish was the intellectual leader in terms of defining the problem and solution strategy. For the chapter using yeast, the yeast systems were provided by Prof. Stathatou and the mechanical analysis (a minor portion of the work) performed by Prof. Athanasiou. For the chapter on Fenton catalysts, his co-author on the resulting article was an undergraduate student who Devashish mentored. In this chapter, Devashish designed the research approach and performed analysis, and the co-author performed the experiments.

AEESP Master's Thesis Awards:

Fanshu Geng, Cornell University
(*Advised by Dr. Damian Helbling*)

Thesis Title: "*Biotransformation of polyfluoroalkyl substances in bioreactors seeded with wastewater microbial communities: rates, products, and pathways*".

Fanshu's thesis evaluated the biotransformation of polyfluoroalkyl substances (PFAS) in laboratory-scale bioreactors. Her thesis makes at least two valuable intellectual contributions to our field. First, her approach to studying PFAS biotransformations resulted in the discovery of 144 biotransformation products, representing one of the most extensive datasets on PFAS biotransformations ever collected. Second, her extensive dataset enabled the discovery of a unified biotransformation pathway that can explain the aerobic biotransformation of fluorotelomer acids and resolve long-standing questions on the biotransformation of fluorotelomer acids. Together, these efforts have already resulted in one first-author publication in *Environmental Science & Technology* with another publication in preparation.

David Lutes, McGill University
(*Advised by Dr. Jinxia Liu*)

Thesis Title: "*Uptake and transformation of per- and polyfluoroalkyl substances from aqueous film-forming foams in concrete.*"

David's thesis investigated the interaction between per- and polyfluoroalkyl substances (PFAS) from aqueous film-forming foams and concrete, an overlooked but significant source of environmental contamination at military bases and airports. His contributions included characterizing the diffusion of PFAS in concrete, the influence of surface conditions and wet-dry cycles on penetration rates, and the discovery that the alkaline nature of concrete could cause alkaline hydrolysis of certain PFAS.

Virginia Tech Student Travel Award:

This year's award recipient is Frank Anthony Mazzola.

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AEESP-AAEES Joint Awards:

Excellence in Environmental Engineering and Science Education (E4): Dr. Ramanitharan Kandiah, Professor and Department Chair, Central State University (Nominated by Dr. Achintya Bezbaruah)

W. Wesley Eckenfelder Graduate Research Award: Dr. Savanna K. Smith, North Carolina State University (Advised by Dr. Francis de los Reyes III)

Paul F. Boulos Excellence in Computational Hydraulics/Hydrology Awards:
Dr. Mohamed Said Fathi, Villanova University
(Nominated by Dr. Virginia Smith)

William Brewster Snow Award: Bruno Fulco Mancini, University of South Florida (Nominated by Dr. Sarina Ergas)

Student Poster Competition Award Winners:

Student Awardees:

- **Mashahiro Abe, University of Michigan**
- **Afzal Ali, University at Albany (SUNY)**
- **Owen Armstrong, McGill University**
- **Maguire Ballard, North Carolina State University**
- **Makenzie Bowden, University of Colorado Boulder**
- **Zachary Calhoun, Duke University**
- **Sheyla Chero-Osorio, University of South Florida**
- **Lucas Crane, Arizona State University**
- **Alondra Deras, Marquette University**
- **Logan Didier, Iowa State University**
- **Samantha DiLoreto, Georgia Tech**
- **Haleigh Fernandez, The Ohio State University**
- **Priyanshu Gupta, The University of Texas at Austin**
- **Xinghan (Greyson) He, McGill University**
- **Sofia Hoffman, Penn State University**
- **Dan Huang, Zhejiang University**
- **Patrick Justen, University of South Carolina**
- **Aidan Labrozzi, Georgia Tech**
- **Xiatong Li, Princeton University**
- **Yurui Li, University of Illinois at Urbana-Champaign**
- **Susanna Maisto, Yale University**
- **Simin Moavenzadeh Ghaznavi, University of Maine**
- **Sumaiya Saifur, University at Buffalo (SUNY)**
- **Jeb Shingler, University of Arizona**
- **Denis Sigei Ruto, West Virginia University**
- **Kavya Somepalli, Temple University**
- **Haocheng Sun, Michigan State University**
- **Kimia Tabib, Oklahoma State University**
- **Xinkai Wu, Lehigh University**
- **Yuchen Zhang, Duke University**
- **Zihao Zhang, Cornell University**
- **Siyi Zhou, Rice University**

Postdoctoral Awardees:

- **Ian Billinge, Yale University**
- **Masashi Kaneda, McGill University**
- **Tolu Odimayomi, Virginia Tech**
- **Shamsunnahar Suchana, McGill University**
- **Ao Xie, Auburn University**

AEESP 2023 Distinguished Service Awards:

Dr. Lee Blaney
President and Board Member

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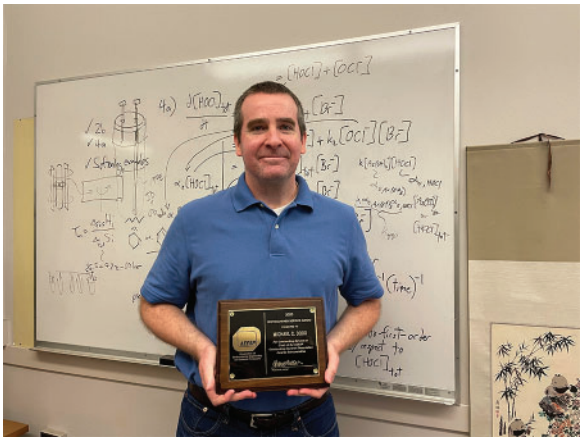
Dr. Claudia Gunsch
Chief Technology Officer
and Board Member

Dr. Lauren Redfern
Internet Resources Committee Chair

Dr. Donna Fennell
Treasurer and Board Member



Dr. Michael Dodd
Outstanding Doctoral Dissertation Awards
Subcommittee Chair

Dr. Baikun Li
Government Affairs Committee Chair

Dr. Ian Bradley
Master's Thesis Awards
Subcommittee Chair

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Dr. Jennifer Becker
AEESP Foundation Chair
and Board Member

Dr. Zhiyong (Jason) Ren
Government Affairs Committee Chair
(2022-2023)

Dr. Treavor Boyer
AEESP Foundation Treasurer
and Board Member

Dr. Rouzbeh Tehrani
Education Committee Chair

Dr. Thanh Huong (Helen) Nguyen
Awards Committee Chair

Dr. Matthew Verbyla
Membership and Demographics
Committee Chair

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Dr. Catherine Peters
Editor-in-Chief,
Environmental Engineering Science

Dr. Lynn Katz
AEEEP Distinguished Lecturer
(2024-2025)

Dr. Gisella Lamas-Samanamud
Diversity, Equity, Inclusion,
and Accessibility Co-Chair

Dr. Daniel Giammar
2024 AEESP Fellow

2024 and 2025 AEESP Fellows:

AEESP wishes to congratulate the following AEESP Fellows inducted at this year's Awards Ceremony:

2024 AEESP Fellows (left to right):
Lutgarde Raskin, Charles Werth, Bill Arnold, Shannon Bartelt-Hunt, Daniel Giammar (pictured above).

2024 AEESP Fellows (left to right):
Andrea Ferro, Jaehong Kim, Heileen Hsu-Kim, Susan Masten, Maya Trotz.

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2025 AEESP Lifetime Members:

AEESP wishes to congratulate the following AEESP members on achieving Lifetime Membership Status:

- **Allen Davis**, University of Maryland, College Park
- **Wayne Davis**, University of Tennessee, Knoxville
- **Menachem Elimelech**, Rice University
- **David Freedman**, Clemson University
- **Nigel Graham**, Imperial College London
- **Susan Masten**, Michigan State University

AEESP Congratulates all 2025 Award Recipients, 2024 & 2025 Fellows, and Lifetime Members!

See end of Newsletter for more photos and memories of the 2025 AEESP Research and Education Conference. Our special thanks to the Duke University faculty and staff for hosting the AEESP Conference this year!

Interested in Hosting AEESP's 2027 Research and Education Conference?

The AEESP Conference Site Selection Committee is now accepting Pre-Proposals from interested potential schools and institutions/consortia for hosting the 2027 AEESP Research and Education Conference.

The Conference represents a coming together of our diverse and vibrant community, and we look forward to continuing this tradition in 2027 and beyond. Pre-Proposals are due **October 15, 2025**, and are required prior to the invitation to submit a full proposal. Questions may be directed to Conference Site Selection Committee Chair Josh Sharp at jsharp@mines.edu.

Download Request for Proposals

Sacred Stops, Scarce Resources: Water Use Along Iran's Railway Lines

By Dr. Hamidreza Sharifan, Assistant Professor, University of Texas at El Paso

As long-distance trains continue to connect major cities in Iran such as Tehran, Bandar Abbas, and Mashhad, a lesser-known challenge is emerging along the way, the impact of religious prayer stops on water consumption in some of Iran's driest regions.

With many passengers performing wudhu (ablution) before prayers, water use at train stations can be significant. On a typical train with around 400 passengers, it's estimated that 70% of travelers perform ablution during stops. Each wudhu uses approximately 3 liters of water, and with two stops per direction on each route, the numbers add up quickly. In total, a round trip between Tehran and Bandar Abbas or Mashhad may use 3,360 liters (3.36 cubic meters) of water solely for ablution. With at least five round trips daily, this translates to over 16,800 liters per day, the majority of which is drawn from station facilities located in arid or water-scarce regions.

Most current prayer stops occur in cities and towns situated in desert climates, where water resources are already under pressure due to drought, overuse, and climate change. Cities in Yazd, Kerman, and South Khorasan provinces, for example, receive less than 150 mm of rainfall annually and often rely on limited groundwater reserves. However, experts argue that strategic re-planning of train prayer stops could offer a simple yet effective solution. By scheduling prayer breaks in cities with higher annual rainfall or more stable water supplies, such as Esfahan, Semnan, or areas near the Alborz foothills, the rail system could significantly reduce its unintended strain on vulnerable regions.

"This is a classic case where logistical planning meets environmental sustainability," says Dr. Melina Matos from Florida Atlantic University, a sustainable policy researcher. "With just a few adjustments in scheduling and stop locations, we can protect our scarce resources while respecting cultural practices." Rail authorities are encouraged to consider this factor in future infrastructure upgrades, particularly as Iran looks to modernize its railway network and expand its role in sustainable national transport. As train travel remains a vital link across Iran's vast geography, optimizing not only fuel and time, but also resource stewardship, may be key to ensuring that the journey benefits both people and the planet.

Spotlight: Environmental Engineering Science, AEESP Journal

AEESP Publications Committee: Dr. Heidi L. Gough, University of Washington, Dr. Susan J. Masten, Michigan State University, Dr. David A. Ladner, Committee Chair, Clemson University, and Dr. Venkataramana Gadhamshetty, South Dakota School of Mines and Technology

The "Spotlight" column draws attention to selected articles in *Environmental Engineering Science* (EES), the official journal of the Association of Environmental Engineering and Science Professors (AEESP). Spotlight articles appear three times per year in the journal as well as in the AEESP newsletter. Through the publication of high-quality peer-reviewed research, EES helps AEESP achieve its mission of developing and disseminating knowledge in environmental engineering and science. In this entry, we shine the spotlight on selected articles from the December 2024 through March 2025 issues of EES. Congratulations to all whose work is highlighted.

Grace Johnson, Taylor Bailey, Dilara Hatinoglu, Ozioma Nwachukwu, Julie Peller, Kyle Doudrick, Bea Van Dam, Sean M.C. Smith, Lauren Ross, and Onur Apul (2024). Land–Sea Connection of Microplastic Fiber Pollution in Frenchman Bay, Maine. *Environmental Engineering Science* 41(12), 584-596.

The presence of microplastics in the marine environment poses a risk to both marine organisms and humans. Discharge of plastic waste into rivers remains one of the predominant pathways by which microplastics enter marine waters. Johnson et al. (2024) investigated the transport of microplastics from the Egypt, Union, and Kilkenny Rivers into Frenchman Bay, Maine, USA. An average of 1.8 fibers/L was found among all sampling locations, which translates to the presence of approximately 400 billion suspected microplastic fibers in the top one meter of Frenchman Bay. Microplastic fibers appear to enter the rivers from land-based sources and are transported through the estuaries into the Bay. The peak levels appear to coincide with the height of tourism in Acadia National Park. The most prominent polymer type was polyacrylamide, which is used extensively in textiles, paper, agriculture, and wastewater treatment. The authors emphasized the need to mitigate the release of microplastics into the environment.

Nicole Heyniger, Patrick J. McNamara, Anthony D. Kappell, Brandon Schultz, Troy Skwor, and Brooke K. Mayer (2025). Mitigation of Antibiotic Resistance Using Ultraviolet Light-Emitting Diodes for Water Treatment. *Environmental Engineering Science* 42(1), 3-14.

UV is an established technology for inactivation of antibiotic-resistant bacteria (ARB) and antibiotic resistance genes (ARG) that currently relies on low-pressure (LP) mercury lamps. Heyniger et al. (2025) considered the question of replacing LP-UV with ultraviolet light-emitting diodes (UV-LED). Additionally, UV wavelength becomes a variable to be considered when using LED. Using controlled conditions with indicator organisms and genes, the study demonstrated that ARG were more resistant than ARB, and ARG inside of cells were more resistant to destruction than extracellular ARG. LED emitting at 265 nm and 285 nm consistently showed similar efficiency for inactivation of the ARB and the ARG compared to LP-UV, and were more efficient than 255 nm LED. However, the energy consumed to achieve the required inactivation levels was significantly lower when using LP-UV. This study expands knowledge on the use of LED for disinfection, while highlighting a continued need to improve the energy-to-light conversion efficiency for UV-range LED..

Haidar Aldaach, Mohammed T. Zaki, and Kevin D. Orner (2025). Improving Prediction of Nutrient Recovery via Struvite Precipitation from Organic Waste Digestate. *Environmental Engineering Science* 42(2), 53-67.

Our society is implementing machine learning in a variety of ways. For example, an algorithm called "random forests" might be used to predict customer retention for subscription businesses, and another algorithm, "XGBoost", might be used to improve the accuracy of disease diagnosis in healthcare. Aldaach et al. (2025) applied these algorithms for an environmental engineering application, i.e., the prediction of nutrient recovery from anaerobic digester supernatant. Nutrient recovery can be achieved via struvite precipitation, where (typically) magnesium and sodium hydroxide are added to combine with available ammonium and phosphate to form solid struvite ($MgNH_4PO_4 \bullet 6H_2O$); however, achieving optimal yields can depend on various factors. Through the machine learning models trained on literature data, the authors showed that the input variables pH, Mg:P ratio, N:P molar ratio, reaction temperature, hydraulic residence time, ammonium concentration, and phosphate concentration were all important for creating the most predictive machine learning model. This work equips engineers and operators with powerful tools to improve the design and performance of struvite-precipitating nutrient recovery processes.

In Memoriam

Dr. Ed Schroeder, University of California, Davis

Ed joined the UC Davis faculty in 1966 and helped build the foundation of our world-class Environmental Engineering program. Through his groundbreaking research, focused on biological wastewater treatment and the use of microbes to degrade air pollutants, Ed fostered collaborations across campus.

A dedicated and inspiring teacher, Ed's true passion lay in guiding his students. Advising nearly 100 master's students and 25 Ph.D. candidates, many of whom have become leaders in academia and industry. Ed was recognized numerous times for his commitment to mentorship, receiving the College's Outstanding Advising Award three times and the UC Davis Distinguished Teaching Award. He encouraged his students to reach their fullest potential, combining high expectations with genuine care for their individual journeys.

In celebration of Ed's life and work, a memorial service will be held at noon on Friday, March 14th, at St. James Church in Davis. We hope this gathering offers a meaningful opportunity to reflect on Ed's remarkable impact as a scholar, mentor and friend.

The Department of Civil and Environmental Engineering has created a KudoBoard for former students, friends and family to share their favorite memories of Ed. We invite you to post your memories and stories of Ed and share the link with anyone else who may enjoy posting or viewing.

As one of the many alumni and friends who deeply admired Ed and Mary, you honored them by investing in the Edward and Mary Schroeder Fund. Established nearly 10 years ago, this fund will continue to provide students with paid research and lab hours, an endeavor close to Ed and Mary's heart. We are grateful to you and everyone who has honored the Schroeders by supporting this fund.

Announcing Recipients of the 2024 Environmental Engineering and Science Foundation Scholarships

The Environmental Engineering and Science Foundation's primary purpose is to recognize and promote excellence in Environmental Engineering and Science. Established in 1998, the Foundation serves as a non-profit partner of the American Academy of Environmental Engineers and Scientists (AAEES) and shares many common purposes with that organization.

The Environmental Engineering and Science Foundation (EESF) has as its Mission "to secure and direct resources to advance environmental engineering and science in the areas of research, education and practice". In line with its mission, EESF has created annual scholarships for Environmental Engineering and Environmental Science students at the Master's level.

In 2024, nine $2,500 scholarships were awarded to outstanding students seeking their Master's Degree in Environmental Engineering and Master's Degree in Environmental Science at accredited universities. These individuals emerged from a highly competitive process that considered academic achievement, resume, essay, and letters of recommendation.

2024 EESF Scholarship Recipients

MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Abigail Chapman
The University of Texas at Austin

Through both academic and internship experience during my undergraduate education, I can now see the importance of persistent pollutant research within the water industry, and I cannot wait to continue working towards progress in that area.

MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Shawnee Chavez
Texas A&M University

Environmental justice is one piece in the puzzle for changing the trajectory of people's lives and it is one that I am deeply passionate about. I always knew I wanted to better my life and the lives of others which is why I went to college to pursue a degree in environmental sciences and continued to further my education with a master's degree in engineering.

MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Alexis Eaton
University of New Hampshire

My experiences conducting research as an undergraduate have solidified what I want to do with my career; there is something so rewarding about identifying a question, developing an experiment to study it, spending time in the field and the lab, and then finally putting the pieces together to make sense of the collected data.

MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Tione Grant
University of South Florida

As I complete my master's, I wish also to achieve two more professional aspirations: to receive my Professional Engineering license and my PhD in Environmental Engineering. Environmental stewardship and preserving the well-being of my communities have been the basis of my convictions since I was younger.

MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Antonia Kopp
Georgia Institute of Technology

I want to work in the private industry as an engineering consultant for small governments, such as counties and municipalities. This will allow me to serve the public by ensuring their water systems are safe and efficient. Ultimately, I intend to become a licensed Professional Engineer (PE) and serve as a liaison between clients and communities on water related projects.

MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Thomas Avery McCall
Clemson University

Once I move to the professional world, I expect that those familiar with PFAS will continue to be in demand in this field. It has been shown that PFAS have negative impacts on health (CDC) and their widespread occurrence makes them a threat to public health.

MASTER'S DEGREE IN ENVIRONMENTAL SCIENCE

Chloe Mellgren
University of Minnesota-Duluth

I love being outside and in the water, but as I grew older, I observed water quality changes in the lake and heard stories of other bodies of water being affected by chemical contaminants. Since learning about PFAS during my sophomore year of undergrad, I became intrigued. These chemicals are not well-known and are incredibly harmful, and I want to help contribute to the research.

MASTER'S DEGREE IN ENVIRONMENTAL SCIENCE

Ana Luisa Sanchez
Arizona State University

As a child, I used to live in a big city near mangroves next to a marine estuary, which I witnessed as it became polluted over time. That left in me a desire to be able to contribute to the preservation of our natural resources when I grew up. That was the reason why I decided to study Environmental Science during my college years.

MASTER'S DEGREE IN ENVIRONMENTAL SCIENCE

Joelle Solowieczyk
St. Peters College

Ultimately, I will utilize my bachelor's in environmental/water engineering, master's in water science, policy and management, and intended PhD to create a proprietary water-focused consulting firm, equipped with visionaries that embrace the inextricability of water-issues and seek intersectional solutions.

Dr. Onur Apul Joins Penn State University

Dr. Onur Apul joins the Department of Civil and Environmental Engineering at Penn State University as an Associate Professor in Fall 2025. His research focuses on water treatment technologies, including the use of engineered adsorbents, nanomaterials, and sustainable processes for the removal of emerging contaminants from drinking water. Before joining Penn State, Dr. Apul was a faculty member at the University of Maine where he was serving as the Director of PFAS Research Initiative. His research has been supported by the NSF, NASA, EREF and other funding agencies. He has published widely on topics related to contaminant adsorption, material characterization, and the environmental applications of nanotechnology. Dr. Apul will contribute to research and teaching efforts in environmental engineering and support interdisciplinary initiatives related to environmental engineering, water quality and sustainability.

Dr. McKenzie Burns to Join Lafayette College

Dr. McKenzie Burns will join the Department of Civil and Environmental Engineering at Lafayette College starting in July 2025. Burns joins the faculty as an assistant professor following her doctoral studies at the University of Wisconsin—Madison. Her research has focused on ammonia recovery from dairy manure using bioelectrochemical systems, proving such technologies as effective manure treatment mechanisms and sustainable ammonia fertilizer production methods. At Lafayette College, Burns plans to further develop bioelectrochemical processes for resource recovery from high strength organic wastes, as well as investigate the environmental and economic impacts of full-scale implementation of such technologies. Burns graduated from Bucknell University with a B.S. in environmental engineering in 2020, and received both the Environmental Research and Education Foundation Fellowship and Grainger Wisconsin Distinguished Graduate Fellowship in support of her dissertation research.

Dr. Domenico Grasso Becomes Interim President at the University of Michigan-Ann Arbor Campus

The faculty at the University of Michigan are pleased to announce the selection of **Dr. Domenico Grasso** to be the University of Michigan's Interim President on the Ann Arbor campus, effective May 8, 2025. Domenico did not have to move far to step into this important role: he has been serving as Chancellor of the University of Michigan-Dearborn campus since 2018. He is a 1987 Ph.D. graduate from U-M where he completed his dissertation on ozonation under the advisement of Walt Weber. He also holds a B.Sc from Worcester Polytechnic Institute and M.S. from Purdue University. He attended college on an Army Reserve Officers' Training Corp Scholarship and finished his commission as a Major in 1990. His academic career began in 1989 at the University of Connecticut, where he also served as Department Chair from 1998 to 2000. Afterward, he became the inaugural Director of a new Engineering Program at Smith College. Five years later, he became Dean of the College of Engineering and Mathematical Sciences at the University of Vermont, where he spent eight years before moving to the University of Delaware as Provost. In 2018, he returned to the University of Michigan to serve as Chancellor of its Dearborn campus and was also a professor of public policy and sustainable engineering.

Domenico has played a pivotal role in AEESP's history. He served on the AEESP board starting in 1998 and ended his Board term as President in 2002. He had long been an advocate for AEESP having a professional journal and proposed Environmental Engineering and Science (EES). After a multi-year debate spanning multiple boards, AEESP finally engaged in a public debate on the matter by publishing statements for and against the move, followed by a vote that ultimately favored adopting EES as the organization's official journal. From 2016 to 2019, he initiated and chaired the National Academies Committee on Grand Challenges and Opportunities for Environmental Engineering in the 21st Century, which included multiple workshops and a report on the future of environmental engineering.

Domenico's interdisciplinary vision, leadership style, and skills are shaped by his time in the Army Reserve, which also solidified his conviction that the environmental engineering profession necessitates the integration of engineering with the social sciences and humanities. As he completes his circular journey back to Ann Arbor, the environmental engineering students, staff, and faculty at U-M are thrilled to welcome him home!

Dr. Jacob King Joins the University of Pittsburgh

Dr. Jacob King will join the Department of Civil and Environmental Engineering at the University Pittsburgh as an Assistant Professor in Fall 2025. Dr. King's research aims to develop decentralized technologies for a circular water economy, with a focus on using electrochemical systems to eliminate contaminants and recover nutrients and critical minerals from waste streams. Dr. King is completing his postdoctoral studies in the Department of Chemical Engineering at the University of Illinois Chicago. He received his PhD and MS in Civil and Environmental Engineering from Stanford University and completed his BS in Environmental Engineering at Duke University.

Dr. David Kwabi Joins Yale University

Dr. David Kwabi joined the Department of Chemical and Environmental Engineering and the Center for Natural Carbon Capture at Yale University as an associate professor in January 2025. Before joining Yale, he was an assistant professor of Mechanical Engineering at the University of Michigan. Research in David's lab focuses on developing energy- and resource-efficient electrochemical systems to address decarbonization and environmental sustainability. Specific applications of interest include carbon capture and sequestration, grid energy storage, pollutant removal, and trace resource recovery. Dr. Kwabi received his Ph.D. in Mechanical Engineering from The Massachusetts Institute of Technology in 2016 and was the recipient of a 2021 CAREER Award from the National Science Foundation. He is an Associate Editor and Editorial Board Member of the journals Frontiers in Climate: Carbon Dioxide Removal and Scientific Reports, respectively. More information about Dr. Kwabi can be found here.

Dr. Daniel McCurry Joins EPFL and Eawag

Dr. Daniel McCurry will join the École Polytechnique Fédérale de Lausanne (EPFL) in Lausanne, Switzerland, as an Associate Professor of Water and Wastewater Chemistry in July 2026. He will have a joint appointment as a Group Leader in the Department of Water Resources and Drinking Water at the Swiss Federal Institute of Aquatic Science and Technology (Eawag) in Dübendorf, Switzerland. He succeeds Prof. Urs von Gunten, who retired from the position in March.

Dr. McCurry is currently an Associate Professor at the University of Southern California, where he has been on the faculty since 2017. Prior to joining USC, he completed his Ph.D. at Stanford, M.S. at Yale, and B.S. at the University of Cincinnati, and worked as a research assistant at the USEPA Office of Research and Development.

Dr. McCurry's research interests are primarily in the areas of water chemistry and treatment, with particular focus on water reuse and oxidative water treatment processes.

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Attn: Brian Schorr, Executive Aministrator
P.O. Box 11074
Alexandria, VA 22312

For questions, call Brian Schorr at 202-261-1309 or email him at bschorr@aeesp.org.

Missouri University of Science and Technology is Thrilled to Welcome 2 New AEESP Members to the Faculty!

Dr. Amber Pete has recently joined Missouri S&T as an Assistant Professor in the Doshi Department of Chemical and Biochemical Engineering at Missouri University of Science and Technology. She earned her PhD in Chemical Engineering from Louisiana State University, where she researched the use of nanomaterials to enhance the bioremediation of oil spills. Amber's doctoral work and current research focus on the adsorption of bacteria and biofilm formation on interfaces, which are critical mechanisms for bioremediation. At Missouri S&T, Amber will continue her research on oil spill bioremediation while expanding her studies to include the transport and biodegradation of microplastics in aquatic environments. Current projects involve investigating how biofilms formed by oil-degrading bacteria, such as *Alcanivorax borkumensis* and *Bacillus subtilis*, interact with microplastics. Additionally, she aims to understand how surface chemistry and photo-oxidation influence the thermodynamic and transport properties of these microplastics. Amber looks forward to collaborating with colleagues in the AEESP community to advance research in environmental engineering.

Dr. Hunter Schroer joined the Civil, Architectural & Environmental Engineering Department at Missouri University of Science & Technology as an assistant professor in August 2024. Prior to joining the faculty at Missouri S&T, he was a research scientist at the University of Iowa and a consulting groundwater remediation engineer. He is a licensed Professional Engineer in the state of Colorado and earned a PhD and MS in environmental engineering from the University of Iowa and a BS in Mechanical Engineering from Baylor University. Dr. Schroer's research is focused on mechanistic understanding and application of environmental biotechnology, including discovering and engineering enzymes and microbes for clean water, material, & energy production.

AEESP Proudly Announces the 2025-2026 Distinguished Lecturer!

2025-26 AEESP Distinguished Lecturer

David Sedlak, PhD
University of California, Berkeley

Lecture 1: Using Small-Scale Treatment Systems to Solve Some of the World's Water Crises

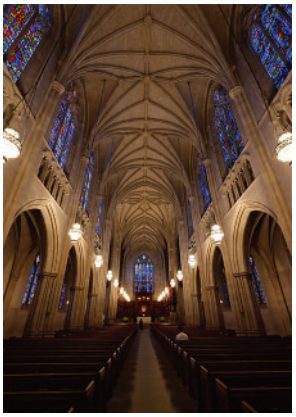
Lecture 2: Using Nature-Based Treatment to Solve Some of the World's Water Crises

Tour dates coming soon! Check the AEESP Foundation website for updates!

A Look Back at the 2025 AEESP Research & Education Conference

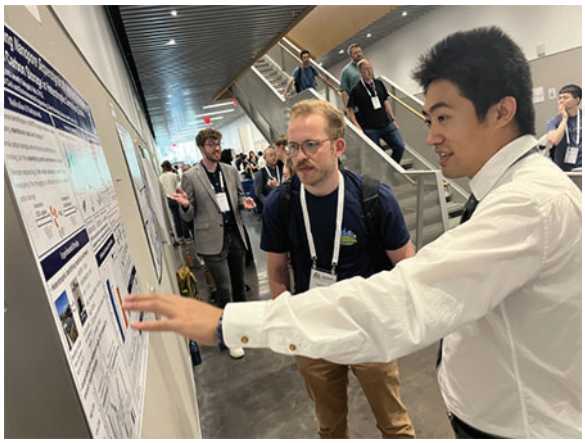
Keynote speaker Elizabeth Biser speaks at the Welcome Plenary.

Duke Chapel

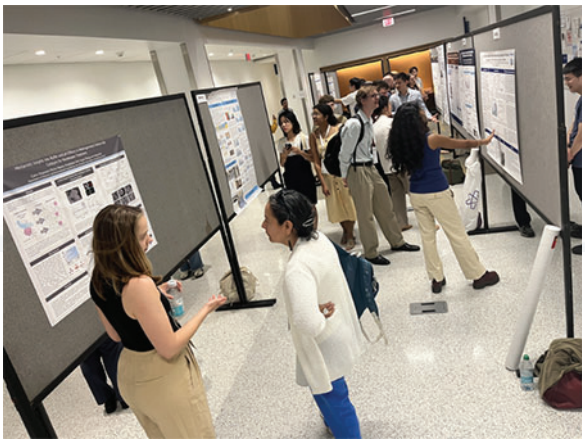


Duke Chapel

Session Group Photo



Poster Session

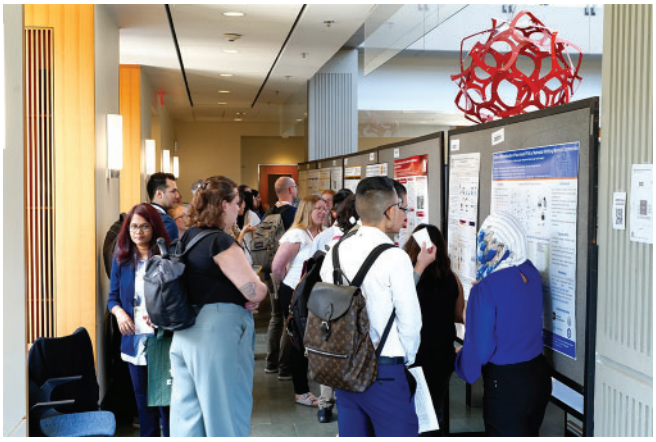


Poster Session

Internet Resources Committee (*left to right*): Joseph Charbonnet, Brian Schorr, Md. Arafat Ali, Yalin Li, Osman Karatum (**Not pictured: Lauren Redfern, Courtney Gardner, and Chandra Tummala*).

A Look Back at the 2025 AEESP Conference (cont.)

Workshop Session



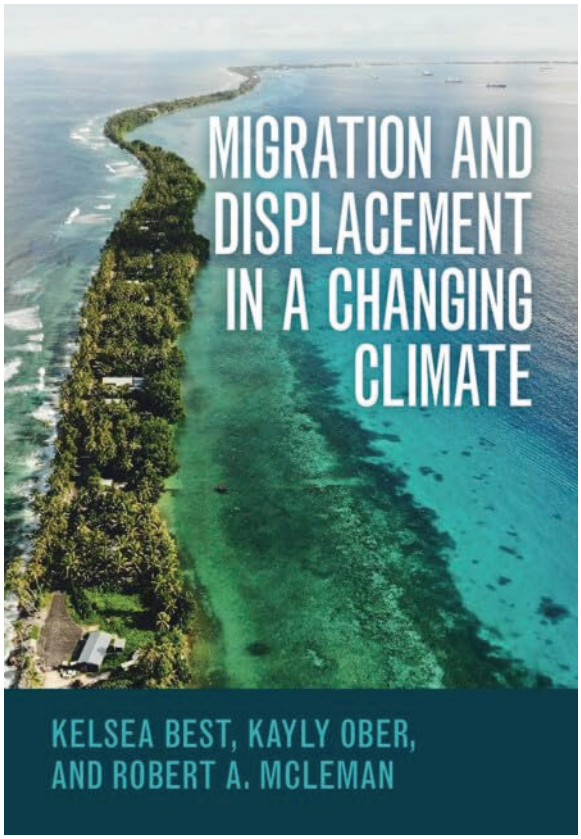
Poster Session

Poster Session

Lunch

Wednesday Evening Reception

Wednesday Evening Reception



Title: Migration and Displacement in a Changing Climate
Authors: Kelsea Best, Kayly Ober, Robert McLeman

Summary: This book provides insight into the impact of climate change on human mobility - including both migration and displacement - by synthesizing key concepts, research, methodology, policy, and emerging issues surrounding the topic. It illuminates the connections between climate change and its implications for voluntary migration, involuntary displacement, and immobility by providing examples from around the world. The chapters use the latest findings from the natural and social sciences to identify key interactions shaping current climate-related migration, displacement, and immobility; predict future changes in those patterns and methods used to model them; summarize key policy and governance instruments available to us to manage the movements of people in a changing climate; and offer directions for future research and opportunities. This book will be valuable for students, researchers, and policy makers of geography, environmental science, climate and sustainability studies, demography, sociology, public policy, and political science.

WEFTEC Master Lecture:

Environmental Biotechnology: The power of partnering with microorganisms

Organized by WEF in collaboration with AEESP

Monday, September 29; 1:30-3:00 pm CT
McCormick Place Convention Center, Chicago, IL
WEFTEC registration required here:
https://www.weftec.org/reg-and-hotel/registration/

Bruce E. Rittmann, PhD
Arizona State University

Moderated by: Dr. Pusker Regmi
Wastewater Sector Leader, Stantec

Lecture Abstract

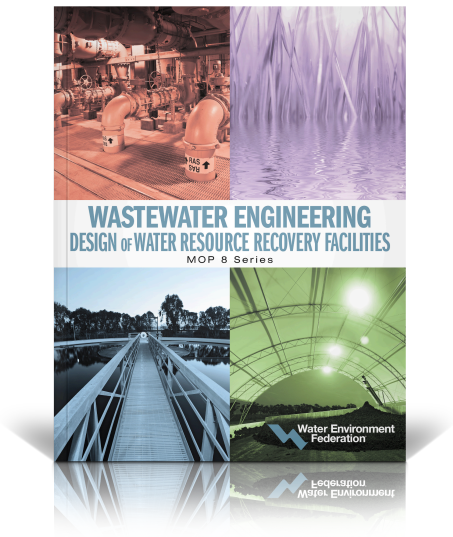
Although biological processes have been part of wastewater treatment for more than 170 years, developments beginning in the 1980s have opened up many new options and created what we now call "Environmental Biotechnology." Research in environmental biotechnology aims to understand microbial communities so that we can "think like the microorganisms," which then allows us to design systems that "work for the microorganism so that they can work for us." This is an ideal partnership that relies on integrating multitude research and development tools: engineering quantification, multiple omics, and materials science. Thus, environmental biotechnology utilizes the power of human intelligence to harness the incredibly wide range of microbial metabolisms. The talk exemplifies this win-win partnership by the hydrogen-based membrane biofilm reactor, or H_2-MBfR. The H_2-MBfR delivers H_2 gas directly to a biofilm of H_2-oxidizing bacteria that can reduce and remove a very wide range of oxidized water pollutants. The talk addresses three distinctly different oxidized pollutants: nitrate (NO_3^-), selenate (SeO_4^{2-}), and palladium (Pd^{2+}). The latter is especially interesting, because reduction of Pd^{2+} yields nanoparticles of elemental Pd (Pd^0NPs) that are outstanding catalysts the enable biodegradation of recalcitrant organics, such as nitro-, chloro-, and fluoro-organics, including the perfluorinated alkyl substances. Dr. Rittmann and Dr. Mark van Loosdrecht were honored for their contributions to founding environmental biotechnology with the 2018 Stockholm Water Prize. The talk concludes with some highlights of the Stockholm Water Prize.

About Dr. Rittmann

Dr. Bruce E. Rittmann is Regents Professor of Environmental Engineering and Director of the Biodesign Swette Center for Environmental Biotechnology at Arizona State University. His research focuses on the science and engineering needed to "manage microbial communities to provide services to society." Services include generating renewable energy, cleaning water and soil, and improving human health. Dr. Rittmann is a member of the National Academy of Engineering; a Fellow of AAAS, WEF, IWA, AEESP, and NAI; and a Distinguished Member of ASCE. Dr. Rittmann was awarded the first Clarke Prize for Outstanding Achievements in Water Science and Technology from the NWRI, the Walter Huber Research Prize and the Simon Freese Award from ASCE, the G.M. Fair Award from AAEES, the Perry L. McCarty/AEESP Founders Award, and the Camp Applied Research Award from WEF. He is the co-winner of the 2018 Stockholm Water Prize. Dr. Rittmann has published over 850 journal articles, books, and book chapters, and he has 21 patents. With Dr. Perry McCarty, Dr. Rittmann co-authored the textbook *Environmental Biotechnology: Principles and Applications* (McGraw-Hill Book Co.), which is now out in its second edition.

Wastewater Engineering: Design of Water Resource Recovery Facilities (MOP 8 Series) is a new textbook from the wastewater experts at the Water Environment Federation (WEF). *Wastewater Engineering* has its roots in WEF's *Design of Water Resource Recovery Facilities* (MOP 8), a long-time fixture on the design engineer's shelf.

Written by a team of professors and industry experts and put through a rigorous review, *Wastewater Engineering* provides vital WRRF design and modeling information for senior-level and graduate students in engineering. Its scope of coverage and classroom-friendly features make it an excellent tool for students and for young professionals transitioning from academia to practice.



Key Features

- Learning objectives for each chapter
- Example problems with solutions to show students application of the covered content
- End-of-chapter practice problems, with solution key available for instructors
- Supporting material to assist in learning, such as key terms and a notation table

Download the first chapter of *Wastewater Engineering: Design of Water Resource Recovery Facilities* and a sample syllabus at https://l.feathr.co/WEF28

Exam copies available to instructors. If you're interested in using *Wastewater Engineering* in your course or have any questions about its contents, please reach out.

Learn more at www.wef.org/WastewaterEngineering.

Like water itself, innovation flows through every challenge and shapes new possibilities. For over 90 years, Carollo has pioneered breakthroughs in water technology – from resilient infrastructure protecting growing communities to groundbreaking solutions safeguarding public health and ecosystems. At Carollo, innovation isn't just about what's new – it's about what's necessary. Every advancement, every improvement, and every solution flows from a single purpose: shaping a future where water enriches every community it touches.

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AEESP Membership

Membership in AEESP offers important benefits to educators, researchers, students, professionals, corporations and organizations engaged in the environmental engineering and science profession. All who are eligible for membership are welcome to join the Association and to participate in the full range of benefits and opportunities. Membership categories and fees are described below, with complete definitions provided in the AEESP Bylaws. Applying online is easy! We welcome your participation!

Regular and Student Membership

Regular Membership in AEESP is open to persons of full-time faculty or instructional rank (instructors, lecturers, assistant, associate, full professors) in environmental engineering or environmental science at academic institutions that offer baccalaureate, diploma, or graduate degrees in environmental engineering, environmental science or related fields.

Rank	Annual Fee
Full Professors	$130
Associate Professors	$100
Assistant Professors	$65
Affiliate Members	$75
Students and Post-docs	$20

Members residing in low and middle income countries as identified by the World Bank may request a discount by contacting the Business Office.

Applying for regular membership is made by submtting a completed application form and a brief, 2 page curriculum vitae online with payment. Alternatively, application materials may be mailed to the Business Office with a check enclosed.

Affiliate Membership

Affiliate Membership is open to individuals who are not eligible for regular membership including:

- Individuals primarily employed outside academia who also hold academic appointments in an environmental engineering or related academic program (e.g. adjunct faculty).
- Individuals primarily employed outside academia who have made contributions to education in environmental engineering or related fields.
- Educators in environmental engineering or related fields who are employed at junior colleges or other educational institutions that do not offer the degrees specified above.
- Individuals who were members at one time and who have retired from active teaching.

Application for affiliate membership is the same as for regular membership. The annual dues for affiliate members are $75.

Sustaining Membership

Sustaining Membership is open to individuals and organizations whose concern for education in environmental engineering and related fields stimulates them to assist in strengthening university programs devoted to this area. Sustaining members are often those who employ or interact closely with graduates of environmental engineering and science programs such as consultants, utilities, research foundations, professional organizations, publishers and equipment manufacturers. The financial support provided by Sustaining Members allows AEESP to carry out a variety of special programs that benefit all members of the profession. Sustaining Members have access to all AEESP publications and are invited to all AEESP events. Annual dues for Sustaining Members are $500. Organizations or individuals desiring more information on Sustaining Membership should write to the Secretary, the President, or the Business Office.

Ready to join? You can apply for membership online!
https://aeesp.org/membership

More information can also be obtained from the AEESP Business Office:

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Association of Environmental Engineering and Science Professors Newsletter

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Nominating - Debora Frigi Rodrigues, Clemson University
Publications - David Ladner, Clemson University
Student and Postdoc Services - Fabrizio Sabba, Black and Veatch
Sustaining Members Engagement - Karl Linden, University of Colorado, Boulder

AEESP Sustaining Members

Carollo Engineers, P.C., Michelle Young, Broomfield, CO
AEESP Meet and Greet Reception at WEFTEC
Hazen and Sawyer, PC, Erik Rosenfeldt, Richmond, VA
AEESP Lecture at AWWA ACE
Corona Environmental Consulting, LLC, Chad Seidel, Louisville, CO AEESP Lecture at AWWA WQTC
Mary Ann Liebert, Inc., Bob Vrooman, New Rochelle, NY
Publisher, Environmental Engineering Science
ACS ENVR, Tim Dittrich, Canton, MI
American Water Works Association, Nancy Sullivan, Denver, CO
Black & Veatch , Andrew Shaw Kansas City, MO
Geosyntec Consultants, Julie Konzuk, Toronto, ON, Canada
John Haley & Aldrich Inc., John Xiong, Costa Mesa, CA
Kennedy Jenks, Charlie Liu, Lakewood, CO
National Water Research Institute, Kevin Hardy, Fountain Valley, CA
OLI Systems, Vineeth Ram, Parsippany, NJ
Regenesis, Paul Erickson, San Clemente, CA
Royal Society of Chemistry, Jon Ferrier, Cambridge, UK
Stantec, Pusker Regmi, Philadelphia, PA
Water Environment Federation, Mary Ann Linder, Alexandria, VA
Xylem, Amanda Lounsbury, Washington, DC
Yokogawa, Amro Hassanein, Sugar Land, TX