AEESP Newsletter

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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 newlsetter to Kyle Doudrick at *kdoudrick@nd.edu*. The next newsletter will appear in July 2025.

President's Letter: Let's Be Relentless!

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

I grew up listening to punk music. Even though most of you haven't seen me sporting blue liberty spikes or wearing multiple studded belts, that spirit still churns inside of me. For me, the punk subculture is about being relentlessly yourself and relentlessly accepting others as themselves. As a lost teen, the inclusivity and positivity that I learned from the lyrics blasting through my CD player – which I had customized with a wite-out-painted skull – built my core values. Eventually, I found some kindred souls, and we created our own community.

I'm tempted to bombard you with lyrics, but I'm going to restrict myself to one line from Laura Jane Grace (Against Me!), "we can be the bands we want to hear, we can define our own generation, is there anybody on the receiving end? are you ready to brave new directions?" Likewise, we can be the advisors that we needed to have, the students that we wanted to be, the colleagues that offered a helping hand, the professors that empathized with students, the researchers that inspired us, and the friends that celebrated each other's accomplishments. AEESP can be the association we want it to be…and it is! I think we achieved this special community through the authenticity of our members. When we show up as relentlessly ourselves, we pull others in and inspire them, infuse creativity into our work, and have greater impact. Let's keep this energy up in 2025!

Because this letter will be published in the January 2025 issue of Environmental Engineering Science, I'm writing between Thanksgiving and New Years – my two favorite holidays! I love to reflect on past experiences and the people involved (Thanksgiving) and dream about what's coming up next (New Years). We all have a lot on our plates, but I hope you take time to reflect on your accomplishments and challenges from 2024 and dream about your plans to make 2025 better. To brave new directions together, we need to understand each other's motivations and ambitions, so I hope you'll also share your reflections and dreams with your family, friends, colleagues, and students.

As noted, Thanksgiving is on my mind. I'm sure many of us are thankful for family, health, shelter, and security. With growing conflicts and policy changes around the world, these basic needs should not be taken for granted. While these issues are exceptionally complex, I believe we can make the world a better place by relentlessly supporting each other every single day. In this regard, I'm inspired by our students. Many of our students moved around the world to a new country, culture, and language to create opportunities for themselves. The personal sacrifices they made to pursue knowledge reinforce the importance of our role as educators and mentors and the responsibilities inherent to those roles. I'm thankful for the courage and bravery of my students, and I'm inspired by the community they've built to help each other through professional and personal challenges. We've been working towards similar goals at AEESP…

…and we've accomplished a lot! As always, that work starts with our standing committees. In September, I asked each committee chair to assemble a list of 2-4 priorities for the year. Some of those activities are self-explanatory – the Awards Committee runs the awards program – but each committee also came up with creative plans to advance their impact for our members. For example, the Diversity, Equity, Inclusion, and Accessibility Committee is developing tools and resources to help our members write and evaluate DEI statements for job applications, and the Membership and Demographics Committee is initiating a student presenter mentorship program for the upcoming conference.

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www.aeesp.org/news/newsletter-archive

Newsletter submissions, comments, and letters to the editor may be sent to:

Kyle Doudrick, AEESP Newsletter Editor
Civil and Environmental
Engineering and Earth Sciences
University of Notre Dame
156 Fitzpatrick Hall
Notre Dame, IN 46556
phone: 574-631-0305
email: kdoudrick@nd.edu

Letters to the president may be sent to:

Lee Blaney
Dept. of Chemical, Biochemical, and
Environmental Engineering
University of Maryland Baltimore County
1000 Hilltop Circle
Engineering 314
Baltimore, MD 21250
phone: 410-455-8608
email: blaney@umbc.edu

Please send address changes to:

Brian Schorr
AEESP Business Office
P.O. Box 11074
Alexandria, VA 22312
phone: (202) 640-6591
email: bschorr@aeesp.org

AEESP Membership Application:

www.aeesp.org/membership

President's Letter (cont.)

I assembled a shared dashboard to capture the activities of each committee, build more transparency across the Association, and track monthly progress towards our shared goals. The dashboard includes 50 different activities, which is absolutely amazing for an 1100-member, volunteer-driven organization! You'll get to hear more from each committee in the short blurbs included in this issue and the July 2025 AEESP Newsletter. For now, I want to offer my heartfelt thanks to the committee chairs and members for all of their hard work.

I'm also thankful to be your President for many reasons. The top one is undoubtedly my love for sharing the wonderful work being done across the Association with the rest of the world. Posting about AEESP members, activities, and events on LinkedIn brings me so much joy. Amplifying our work via social media also has a lot of benefits. First, our positive community and emphasis on professional development pull others in – quite literally – as new members. As President, I send a personal email to every new member of our Association, and I get so excited when I recognize the names of new AEESP members from LinkedIn. Second, many of our programs operate behind the scenes. The increased transparency offered by social media boosts engagement opportunities and publicly acknowledges the hard work of our members. As one example, our post about the AEESP-sponsored plenary lecture by Dr. Shirley Malcom at the 42nd AAAR Annual Conference highlighted our engagement with partner organizations; likewise, our post about the AEESP YouTube account showcased the excellent resources our members developed to promote environmental engineering and science. One of my goals with these amplification efforts is to recruit more sustaining members, who bring new opportunities to the table and enable us to initiate new programs that benefit our community. We've already added five new Sustaining members! To help with these efforts, please follow and use #AEESP.

OK, I lied, one more lyric! This one's from Dennis Lyxzén (Refused), "how can we expect anyone to listen if we're using the same old voice, we need new noise, new art for real people!" Our mission reflects the same sentiment, "AEESP is driven to… reimagine the skills necessary for environmental engineers and scientists to provide solutions that benefit regional, national, and global communities." To fulfill our mission, we need to pursue new initiatives and find new ways to get our message across. Like New Years, this is a time to dream…

…and I've got big dreams for 2025. The AEESP Experts program is coming together through the hard work of a 12-person organizing team called Ground Control. Please recall, this program is meant to (i) increase the visibility of environmental engineering and science to the general public and (ii) build recognition of your knowledge and expertise by facilitating opportunities for media engagement. We've had 106 members sign up as Experts, and I'm so excited to start connecting them with reporters. Our other new initiative, the AEESP Communities of Practice, is meant to empower members to share their knowledge with each other, learn together, and develop products on a specific topic. So far, we've received 22 applications focused on promoting active learning in online courses, developing user-inspired and community-based approaches for environmental engineering, building a community of practitioners that teach design-intensive courses, and mentoring novice researchers, among other topics. I'm confident these efforts will help us find new voices and create real benefits for our members.

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President's Letter (cont.)

One of my other dreams is to see all of you at our next AEESP Research and Education Conference, which will be held at Duke University on May 20-22, 2025. I'm so excited to hear about the latest developments in your labs and classrooms, celebrate your accomplishments, and hear how you think AEESP can continue to relentlessly support our members – see you there!

Lee Blaney
2024-25 AEESP President

*The above letter was written on December 12, 2024. Much as changed since that time, and I invite you to read my January 28, 2025 letter to AEESP members, "We will relentlessly pursue our mission".

AEESP thanks to Dr. Shirly Malcom for Providing the 2024 Plenary Lecture at AAAR's 42nd Annual Conference!

On Tuesday, October 22, Dr. Shirley Malcom provided the Plenary Lecture at the 42nd Annual Conference of the American Association for Aerosol Research (AAAR). Dr. Malcom is a Senior Advisor and Director of SEA Change. AEESP is a proud sponsor of this annual event and we extend our thanks to Dr. Malcom for her lecture *Wash Day: Supporting Air Justice*. We have included several photos below from Dr. Malcom's Plenary Session courtesy of AEESP Vice President Dr. José Cerrato.

American Association for Aerosol Research

AEESP Foundation Recognizes the Contributions of 2024 Donors

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

The AEESP Foundation works to enhance the public outreach and education efforts of AEESP members and encourage excellence in environmental engineering and science education and research. The Foundation accomplishes this mission, in part, by providing stewardship of the financial resources needed to support the AEESP Distinguished Lecturer Series and AEESP Awards. In recent years, the Foundation has worked to endow several awards, which ensures that the AEESP Foundation can continue to provide cash prizes, plaques, and travel stipends to award recipients.

The AEESP Foundation is grateful to all of the individuals who generously donated to the AEESP Foundation in 2024, listed below in alphabetical order:

- Shannon Bartelt-Hunt, University of Nebraska-Lincoln
- Bill Batchelor (Emeritus faculty) and Colleen Batchelor, Texas A&M University
- Jennifer Becker, Michigan Technological University
- Joseph Delfino (Emeritus faculty), University of Florida
- Donna Fennell, Rutgers University
- Joseph Hughes, Drexel University
- Cindy Lee (Emeritus faculty), Clemson University
- Spyros Pavlosthathis, Georgia Institute of Technology
- Jason Ren, Princeton University
- Peter Strom (Emeritus faculty), Rutgers University
- David Vaccari, Stevens Institute of Technology
- *Plus two additional anonymous donations

Additionally, several individuals supported the AEESP Foundation by opting to not receive an AEESP / AEESP Foundation plaque (valued at ~$90) in recognition of their accomplishments or service to AEESP or the AEESP Foundation. These savings were then placed in the AEESP Foundation general operating fund. We express our gratitude to the individuals who supported the AEESP Foundation in this way and are listed below in alphabetical order:

- Susan Masten, Michigan State University
- Mira Olson, Drexel University

To learn more about the AEESP awards, including their endowment status, please visit https://aeespfoundation.org/awards. To make a contribution to the AEESP Foundation via credit card, please visit https://aeespfoundation.org/donate or contact Brian Schorr by email at bschorr@aeesp.org or via telephone at 202-261-1309.

AEESP Foundation Board Welcomes Two New Members

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

In December 2024, the AEESP Foundation Board of Directors elected two new members, Dr. Belinda Sturm (University of Kansas) and Dr. Jessica Wilson (Manhattan University), who began their three-year terms in January 2025. Dr. Sturm was elected as a member of the AEESP Board of Directors. Dr. Wilson was elected from the general AEESP membership. Dr. Wilson has been a member of the Student and Postdoc Services Committee (SPSC) since 2021 and currently serves as SPSC Secretary. She also received an AEESP Foundation Educational Grant in 2019 to improve K-12 students' ecological literacy of urban water quality issues.

Dr. Belinda Sturm

The Foundation Board Bylaws specify that three of its directors are to be members of the AEESP Board of Directors at the time of their election to the Foundation Board. Since 2022, the Foundation Board has solicited self-nominations from the general AEESP membership with a strong history of involvement with, and service to, AEESP; the ability to dedicate the time needed to complete the work of the Foundation; strong organizational and leadership skills; and the willingness to ultimately serve as Foundation Chair. The AEESP Foundation was very pleased to receive several strong self-nominations from well-qualified candidates in 2024. The next request for self-nominations of prospective Board members from the general membership will occur in Fall 2025.

Dr. Jessica Wilson

The Foundation Board welcomes Drs. Sturm and Wilson and expresses its gratitude to Dr. Treavor Boyer (Arizona State University) and Dr. Jennifer Becker (Michigan Technological University) for their dedicated service on the Board.

'A Closer Look at Legionella' during the AEESP Emerging Investigator Lecture at AWWA's Water Quality Technology Conference

Dr. Ariel Atkinson, Project Manager for the Applied Water Quality Research group at Southern Nevada Water Authority, gave the AEESP Emerging Investigator Lecture on November 18th 2024 at the American Water Works Association's 2024 Water Quality and Technology Conference (WQTC). Dr. Atkinson's lecture was titled "*What's in Your Groundwater? A Closer Look at Legionella.*" Dr. Atkinson began by outlining her path to applied research and what utility-based research entails. Legionella regulatory considerations were used as a frame to touch on a variety of Legionella research topics including occurrence in groundwater, public health implications, environmental effects on proliferation, quantitative methods, amoeba internalization, efficacy of treatment techniques, implementation of full-scale UV-LED, and approaches for proactive utilities. Dr. Atkinson extends her thanks to AEESP and Sustaining Member Corona Environmental Consulting for the opportunity to share her thoughts, questions, and research with the engaged WQTC audience.

American Water Works Association

CORONA ENVIRONMENTAL CONSULTING

AEESP thanks the American Water Works Association for hosting the *Emerging Investigator* Lecture and Corona Environmental Consultants for sponsoring Dr. Atkinson's presentation.

AEESP Launches Diversity, Equity, Inclusion, and Accessibility Committee

The Diversity, Equity, Inclusion, and Accessibility (DEIA) Committee is AEESP's newest and much-needed committee, co-led by Drs. Aaron Bivins and Gisella Lamas. The committee began as an AEESP taskforce of 10 people led by past President Dr. Debora Rodrigues in 2023 and now has over 25 members. The primary goal of the DEIA committee is to develop a toolbox to help aspiring and current faculty engage most effectively with underrepresented groups in their local context to produce an academy that is inclusive and representative of society. For the 2024-2025 year, the DEIA committee has been organized into three subcommittees, with each one focused on one of the committee's three goals. One subcommittee is developing joint partnerships with other professional organizations, while a second is considering revisions to AEESP's current DEI statement, and a third is creating a guidance document for the creation and evaluation of DEIA statements for faculty positions.

Spotlight: Environmental Engineering Science, AEESP Journal

AEESP Publications Committee: Dr. Adeyemi S. Adeleye, Columbia University, Dr. Veera Gnaneswar Gude, Purdue University, and Dr. David A. Ladner, Committee Chair, Clemson University

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, the EES journal 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 August through November 2024 issues of EES. Congratulations to those whose work is highlighted.

Maryam Salehi, Lauren N. Pincus, Baolin Deng, and Catherine A. Peters (2024). Microplastics: From intrinsic properties to environmental fate. *Environmental Engineering Science* 41(11), 425-435.

A recent special issue of EES dealt with microplastics. Leading the issue was Salehi et al. (2024), who critically evaluated the status of microplastics research and outlined various environmental phenomena promoted by microplastics interactions with the environment. The ubiquitous presence of microplastics in all environmental compartments has emerged as an environmental challenge in recent decades. Large quantities of microplastics are being released into the environment where they undergo numerous transformations through various degradation processes, often releasing byproducts of adverse health concerns and toxic effects. To develop effective strategies for microplastics management, a deeper knowledge of the inherent chemical and physical characteristics and their interaction with the environment is required. The authors identified critical knowledge gaps in understanding the links between the intrinsic properties of microplastics and their environmental fate and human exposure. Molecular and structural characteristics of the polymer influence their degradation rates. Degradation may take place through physicochemical, photochemical and biodegradation routes. The nature and kinetics of degradation depend on the various chemical bonds, physical properties including molecular weights, and environmental factors. Most of the reviewed research reported environmental degradation of pure plastic materials; however, additives are often used to improve the functional properties and performance of various plastic products, which add to the increased complexity of their degradation kinetics. More research is required in the additive arena. Increased efforts to understand the physicochemical degradation and its impacts on the diversity, composition, and abundance of microbial communities during biodegradation of microplastics are recommended. Similarly, studies focusing on understanding the linkage between intrinsic microplastic properties and mechanical degradation provide new insights into further reaction pathways. Finally, long-term effects of degradation byproducts on the environment are critical for assessing their ecological and health risks and informing policy and technological interventions.

Campbell J. McColley and Jeffrey A. Nason (2024). Eco-corona formation on photooxidized plastics exposed to mixed organic matter. *Environmental Engineering Science* 41(11), 448-458.

One of the papers in the special issue discussed microplastics, abundant in aquatic systems, being covered in natural organic matter (NOM), often called eco-coronas (McColley and Nason 2024). The eco-corona coating can alter the fate and effects of microplastics in water bodies, but the mechanism of eco-corona formation is poorly understood. In addition, UV radiation from the sun can photooxidize microplastics in water, potentially changing how they interact with eco-coronas. McColley and Nason (2024) aimed to shed light on the mechanisms underlying the formation of eco-coronas on pristine and UV-photooxidized microplastics. They used polystyrene and PVC as model microplastics; and selected Suwannee River humic acid (SRHA) and bovine serum albumin (BSA) as NOM. The plastics were spin-coated onto the sensor of a quartz crystal microbalance with dissipation (QCM-D) apparatus, which was then used to measure the shifts in frequency and dissipation upon depositing the two types of NOM. While BSA's affinity for polystyrene microplastics increased after photooxidation, photooxidation decreased the affinity of BSA for PVC, showing a clear impact of microplastic polymer on the affinity of eco-coronas. Additionally, while photooxidation did not have much impact on the affinity of SRHA for polystyrene, it decreased its affinity for PVC. The interactions were mediated by electrostatic attractions, hydrophobic interactions, hydrogen bonding, and divalent cation bridging.

Chinmayee Panigrahi, Suprio Kamal, Ji Qin, Sarah Ziemann, Ehsanur Rahman, Margaret House, Cari Dutcher, and Boya Xiong (2024). Removal of pristine and UV-weathered microplastics from water: Moringa oleifera seed protein as a natural coagulant. *Environmental Engineering Science* 41(11), 477-489.

Another of the special issue papers discussed a novel, greener chemical for drinking water treatment, with a focus on micro-

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plastics removal (Panigrahi et al. 2024). Chemical coagulants and flocculants used for water treatment have high economic and environmental costs. In addition, the efficacy of currently used coagulants and flocculants for removing microplastics from drinking water depends on their physicochemical properties. Several greener alternative coagulants have been proposed for water treatment. Seeds from Moringa oleifera, a fast-growing tropical plant, contain cationic proteins (Moringa oleifera cationic protein or MOCP) that have been successfully used for coagulation in water treatment. Compared to conventional chemical coagulants like alum, MOPC is more accessible and has less environmental impact. Panigrahi et al. (2024) investigated the efficacy of MOCP for removing pristine and photooxidized polyethylene microplastics from water. They used MOCP either as a suspension (for coagulation) or by immobilizing it on sand for flocculation. Using a series of carefully planned jar tests performed with microplastics dispersed in distilled water, they found that MOCP is a viable alternative to alum. However, sand-immobilized MOPC was less effective in incorporating microplastics into flocs compared to polyacrylamide, a widely used flocculant. When the tests were repeated with the microplastics dispersed in Mississippi River water instead of distilled water, MOCP was less effective than alum. Overall, the authors concluded that charge neutralization was an important mechanism for microplastic removal by MOPC, and the natural coagulants were promising for mitigating microplastic pollutants in aquatic environments.

T.A. Patrick, L.W. Maguire, J. Espin, and C.M. Gardner (2024). Eco-Wildfire impacts on soil microbiomes: Potential for disruptions to nitrogen-cycling bacteria. *Environmental Engineering Science* 41(9), 337-346.

Aside from those microplastics-focused entries, the final paper we spotlight here deals with soil microbiology after wildfires (Patrick et al. 2024). The devastation of a wildfire leaves obvious signs in the form of charred trees, scorched vegetation, and perhaps burned-out homes. But some effects are subtler and harder to study than those obvious signs. Patrick et al. (2024) evaluated what happens just below the subsurface among microbial communities inhabiting the soil. They took samples a year after the Woolsey Fire in the Santa Monica Mountains National Recreation Area in California, which burned 95,000 acres from November 2018 to January 2019. They saw that 6 families and 17 genera of microbes were reduced in abundance when wildfire severity increased. Interestingly, 3 families and 6 genera increased with wildfire severity, perhaps because they filled niches left by the declination of others. Gene abundance and expression data also indicated that high-severity wildfires negatively impact nitrogen-cycling bacteria, and this persisted a year after the fire. This study paves a path toward understanding microbial community dynamics during ecosystem recovery. As this summary is being written (January 9, 2025), new fires are blazing in California, making this research further relevant.

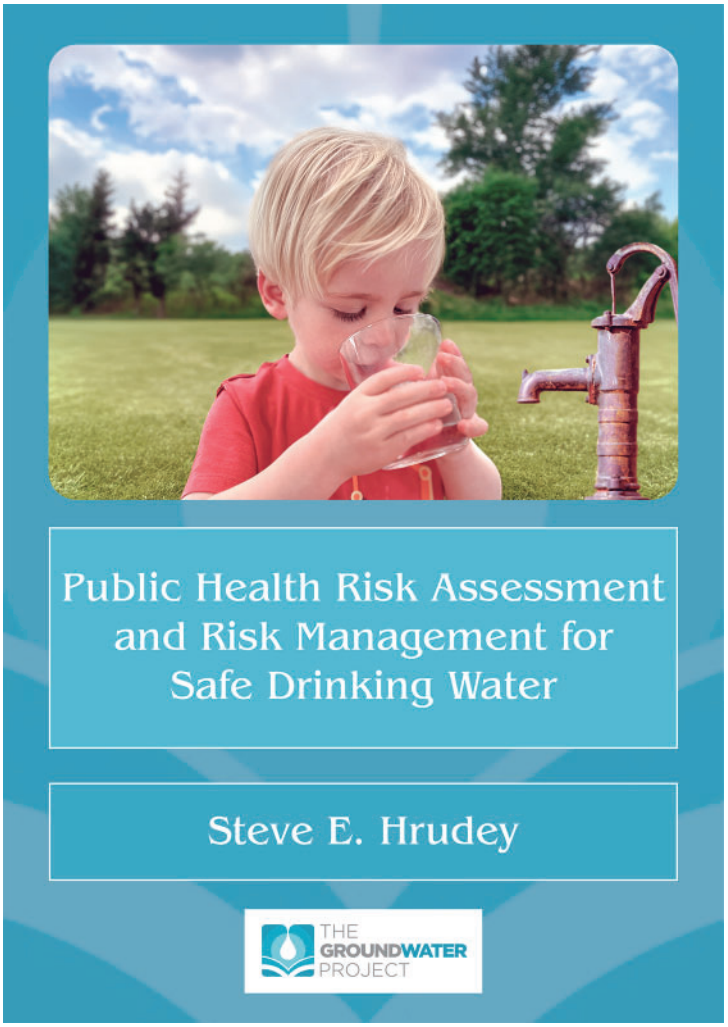
Did You Know?

AEESP has moved its Membership Listserv to the Google Platform. Members who have appeared to stop receiving notifications should check to make sure: 1) your membership is in good standing (log into your account here), and 2) that you have received an invitation via Google to join the AEESP Listserv.

Members in arrears will receive the Google Group invitation to join the Listserv upon the payment of annual membership dues. If your membership status is up to date and you still are not receiving AEESP Listserv announcements, please contact AEESP Listserv Manager Yalin Li at listserv@aeesp.org, with the subject heading "AEESP Listserv: Attn: Yalin Li", with your request to be added in the main body of the email. Please allow up to 24 hours for Yalin to respond. You may also contact AEESP Executive Administrator Brian Schorr at the Business Office at 202-640-6591 or email bschorr@aeesp.org for questions concerning your membership and the Listserv.

Free e-Book on Public Health Risk Assessment

University of Alberta Emeritus Professor and AEESP Member Steve E. Hrudey has published a new online book for free download as a pdf at: https://doi.org/10.62592/MNDH2138. He has also provided an interview summarizing the book coverage that offers some reasons readers might find the book useful at: https://youtu.be/CTvZc0xAIFs?si=1h7Dz2pnxBlQtqtB.



This new book provides a comprehensive overview of how criteria for ensuring safe drinking water are developed that is grounded on decades of experience pursuing this challenge, including participation in two public inquiries into fatal drinking water outbreaks (Walkerton, Ontario and Havelock North, New Zealand). The book is not a manual for conducting health risk assessment or risk management although many accessible how-to references are cited for this purpose. The book does provide an introduction and analysis of the strengths and limitations of the scientific approaches for gaining evidence to estimate risks and guide risk management, including environmental epidemiology and toxicology. Readers can expect to expand their understanding of key issues and to enhance their critical thinking to guide effective judgement for ensuring safe drinking water.

This book has been published by the Groundwater Project (gw-project.org), a registered charity in Canada that is global in scope. The Project creates high-quality learning materials about groundwater making them available for free download. The project is led by Dr. John Cherry — recipient of the 2020 Stockholm Water Prize. To date, 54 free books have been published, 30 are near publication and a further 150 are being written. Books are translated once published with 55 languages in translation. Books have been read over 1.5 million times in 178 countries. The project now also includes educational videos and interactive learning tools.

Environmental Engineering
UNIVERSITY OF COLORADO **BOULDER**

3rd Water Reuse Academy - April 1-3, 2025
Environmental Engineering Program
University of Colorado at Boulder

Water Reuse is our future!

The **time for water reuse** on multiple scales from non-potable to direct potable reuse **is now**. For this vision to be realized, there is a need for water engineers to be grounded not only in engineering fundamentals, but the breadth and communication skills to navigate water supply issues, and the complexities of dealing with multiple stakeholders.

The mission of the Water Reuse Program at the University of Colorado at Boulder is to educate students through coursework and research to be successful water reuse professionals. CU faculty have multiple water reuse oriented research projects including teaming with the Water Research Foundation and others on a multi-year, multi-million-dollar U.S. EPA research grant "Unlocking the Nationwide Potential of Water Reuse." In addition, our proposal in response to the U.S. EPA call "Occurrence and Implications of De Facto Water Reuse on Drinking Water Supplies" has been recommended for funding by external reviews and is awaiting final EPA funding determination.

We are pleased to announce the **3rd edition of the University of Colorado Water Reuse Academy**, directed to practicing professionals. This 2.5-day CU Water Reuse Academy to be held on **April 1-3, 2025** at the University of Colorado-Boulder SEEC facility. The expanded program will include management, planning and implementation in addition to raw and finished water quality concerns, operational considerations, and treatment process fundamentals linked to design. The last afternoon there will be a tour of the Aurora Water Peter Binney purification facility, one of the nation's largest and most advanced treatment facilities.

Attendees must have a basic understanding of water and wastewater treatment, with either a degree in engineering or at least five years of professional experience in treatment. The course is taught by CU Boulder faculty and affiliated faculty. Our keynote speaker, Doug Owen, will use his experience with the San Diego Pure Water Program to address big picture issues and approaches. Registration is $1,200 and is limited to 25 attendees. All instructional costs, a set of course notes, and all meals are included. Lodging is not included. The deadline for registration is March 14th, 2025. Cancellations made up until that date and will receive a refund less a $100 cancellation fee. Registrations will be confirmed by email. Participants can register here. For more information, contact Anna Segur.

What you will learn about potable water reuse in this spring 2025 course:

- *An overview of water reuse, drivers and the regulations and guidelines that guide it.*
- *Which microbiological and chemical contaminants are of concern.*
- *The impact of upstream wastewater treatment on reuse water quality and operational concerns.*
- *Process fundamentals, design criteria and implementation of treatment technologies:*
    - *Oxidation - ozone, UV and AOP*
    - *Membranes - microfiltration, nanofiltration and reverse osmosis*
    - *Advanced treatment use of coagulation, biofiltration, activated carbon adsorption and ion exchange*
- *Management, planning and implementation.*

Dr. Amanda Carneiro Marques Joins Drexel University

Dr. Amanda Carneiro Marques joined the Civil, Architectural and Environmental Engineering Department at Drexel University as an Assistant Professor in the Fall 2024. She completed her postdoctoral studies and Ph.D. at the University of Massachusetts Amherst, M.S. in the Civil Engineering Program at Universidade Federal do Rio de Janeiro (Brazil), and B.S. in Water Resources and Environmental Engineering at Universidade Federal Fluminense (Brazil). Dr. Marques's research expertise lies in the areas of water quality monitoring and modeling, assessing contaminant pathways and surface-subsurface water interactions using environmental tracers and stable water isotopes, and sustainability and climate change research to support decision-making. She is enthusiastic about empowering students and building a plural and cooperative community, working towards making science more accessible, equitable, collaborative, and inclusive.

Dr. Josh Atkinson Joins Princeton University

Dr. Josh Atkinson joined the Department of Civil and Environmental Engineering and the Omenn-Darling Bioengineering Institute at Princeton University as an assistant professor in January 2024. Dr. Atkinson received his Ph.D. in Systems, Synthetic, and Physical Biology from Rice University in 2019 and subsequently was an NSF postdoctoral fellow jointly at the University of Southern California and Aarhus University. Dr. Atkinson's research focuses on applying synthetic biology approaches to engineer microbes embedded in electrochemical devices for use in chemical sensing as well as engineering microbial communities for chemical synthesis and remediation. Dr. Atkinson has expertise in protein design, metabolic engineering, and biophysical characterization of biological electron transfer. His research incorporates laboratory studies and computational design of proteins and both metabolic and gene circuits. More information about Dr. Atkinson can be found here here.

Dr. Virender Sharma Joins the University of Miami

Dr. Virender K. Sharma joined the University of Miami College of Engineering in 2025. Dr. Sharma received his Ph.D. from Rosenstiel School of Marine and Atmospheric Science (RSMAS), University of Miami in 1989. His postdoctoral studies were at SUNY Buffalo and Brookhaven National Laboratory (BNL). Dr. Sharma has made seminal contributions in the areas of chemistry and environmental applications of ferrate. Ferrate is an earth-abundant iron-based molecule, in which iron is in the plus 6-oxidation state ($Fe^{VI}O_4^{2-}$) to serve as an advanced material to perform as an efficient surface disinfectant in hospital settings and as a water treatment chemical. He is also performing research on metal-organic frameworks (MOFs), covalent organic frameworks (COFs), and single atom catalysts (SACs). In his research, Dr. Sharma is demonstrating multiple roles of advanced materials to address real-word challenges in water, food, energy, and healthcare sustainability. The mission of Dr. Sharma is "*Saving Lives even One Life*". Dr. Sharma is recognized as *Highly Cited Researcher* (Top 1 %) by the Clarivate (Web of Science). He has Google Scholar citations of more than >45,000 with H-Index 103. He has been ranked globally top 25 in citations in the fields of *water treatment, environmental chemistry, and environmental health*. His distinguished awards include *Fellow of the American Association for the Advancement of Science, American Chemical Society (ACS), European Academy of Sciences, and Royal Society of Chemistry*, Southwest Region ACS Award, Humboldt Research Award, Steven K. Dentel AEESP Award for Global Outreach, Bush Excellence Award for International Research, Prince Sultan Bin Abdulaziz International Prize for Water, and Outstanding Distinguished Scientist Award by Sigma Xi (Texas A&M University Chapter). Currently, Dr. Sharma is serving as an associate editor or editorial member of several international journals.

Dr. Menachem Elimelech Joins Rice University and the Rice WaTER Institute

Dr. Menachem Elimelech has joined Rice University as the Nancy and Clint Carlson Professor, with joint appointments in the Department of Civil & Environmental Engineering and the Department of Chemical & Biomolecular Engineering. Prior to Rice, Elimelech was the Sterling Professor of Chemical and Environmental Engineering at Yale University. Elimelech will play several roles in the recently established Rice University WaTER Institute. Professor Elimelech's research focuses on membrane-based processes for energy-efficient desalination and wastewater reuse, advanced materials for next-generation separation and water decontamination technologies, and environmental applications of nanomaterials. He is the recipient of numerous awards in recognition of his research contributions. Notable among these awards are the 2005 Clarke Prize for excellence in water research; election to the US National Academy of Engineering in 2006; the Eni Prize for 'Protection of the Environment' in 2015; and election to the Chinese Academy of Engineering in 2017, the Australian Academy of Technology and Engineering in 2021, the Canadian Academy of Engineering in 2022, and the National Academy of Engineering of Korea in 2022. Professor Elimelech has advised 52 PhD students and 50 postdoctoral researchers, many of whom hold leading positions in academia and industry. In recognition of his excellence in teaching and mentoring, he received the W.M. Keck Foundation Engineering Teaching Excellence Award in 1994, the Yale University Graduate Mentoring Award in 2004, and the Yale University Postdoctoral Mentoring Prize in 2012.

Dr. Neha Sharma Joins Auburn University

Dr. Neha Sharma will be joining the Department of Civil and Environmental Engineering at Auburn University as an Assistant Professor in August 2025. Her research bridges environmental engineering and geochemistry, with a focus on developing innovative strategies to redefine nutrient management, mitigate human-induced disruptions to natural processes, and advance a circular water economy. At Auburn, her research group will work on pioneering sustainable solutions for resource recovery and water quality management.

Currently, Dr. Sharma is a postdoctoral scholar at Stanford University, where she investigates the failure mechanisms that limit the scale-up and long-term efficiency of nutrient recovery technologies. She earned her Ph.D. in Environmental Engineering from Washington University in St. Louis as a McDonnell International Academy Scholar under the mentorship of Dr. Daniel Giammar. Her doctoral research explored the role of trace metals in driving greenhouse gas emissions from natural aquatic systems.

Dr. Sharma holds a B.S. in Civil Engineering from PEC University of Technology, India, and an M.S. in Environmental Engineering from the Indian Institute of Technology, Bombay.

Last Call for 2025 AEESP Fellows Nominations!

The deadline to submit nominations for AEESP Fellows is **11:59 pm ET (U.S.) on Sunday, March 2, 2025**.

2025 AEESP Award and 2024 & 2025 Fellow Recipients will be recognized during the 2025 Research and Education Conference at Duke University May 20-22, 2025.

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:

Brian Schorr
AEESP Business Office
P.O. Box 11074
Alexandria, VA 22312
Phone: (202) 640-6591 ext. 309
email: bschorr@aeesp.org

Association of Environmental Engineering and Science Professors Newsletter

Kyle Doudrick, Newsletter Editor
c/o AEESP Business Office
P.O. Box 11074
Alexandria, VA 22312
Phone: 574-631-0305
Email: kdoudrick@nd.edu

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Lee Blaney
Chemical, Biochemical, and Environmental Engineering
University of Maryland Baltimore County
1000 Hilltop Circle
Baltimore, MD 21250
Phone: 410-455-8608
Email: blaney@umbc.edu

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Secretary

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Dept. of Civil and Environmental Enginering
Case Western Reserve University
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Cleveland, OH 44106
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ENRS Bldg., Rm. 252A
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Chief Information Officer

Belinda McSwain Sturm
Civil, Environmental, and Architectural Engineering
University of Kansas
2150 Learned Hall
1530 W. 15th Street
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Phone: 785-864-1739
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Claudia Gunsch
Civil and Environmental Engineering
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121 Hudson Hall
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