AEESP Newsletter

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Highlights

Need to renew your 2019 AEESP membership? Go to "Membership > Online Renewal" 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 Laura Arias Chavez at LChavez@tntech.edu. The next newsletter will appear in February 2019.

President's Letter

BY MAYA TROTZ
University of South Florida

Dear AEESP Members,

"From the President's corner," in the first newsletter of the American Association of Professors in Sanitary Engineering (AAPSE) published in September 1965, Earman Pearson wrote that "our strength and effectiveness in AAPSE comes from the considered judgement resulting from effective communication with effective, dedicated educators in many institutions regardless of location, prestige status, or size." As the organization's name changed from AAPSE to the Association of Environmental Engineering Professors (AEEP) in 1972 to the Association of Environmental Engineering & Science Professors (AEESP) in 1988, membership increased as did the diversity of its members. Becoming the President of AEESP, now an organization with 885 members, is humbling and a role that I, like those on our board and committees and those who serve and have served AEESP, are honored to have been given and take seriously.

Members may rotate off the board, but that does not mean they stop working with AEESP. Linda Weavers will chair the Nominating committee to propose the next round of board members; Greg Lowry will continue to work on Environmental Science and Policy and integrate with the Government Affairs committee; and Paige Novak will chair the Sustaining Members committee. We owe them thanks for their service. We also welcome our new board members, Amy Pruden, Bill Arnold, and Helen Hsu-Kim, whose anticipated service will help AEESP continue to evolve and grow.

In "Factfulness," Hans Rosling encourages us to always look at the data, as things may not be as bad as they seem. Many of our AEESP committees and the board have been looking at data. This year, Lee Blaney, Judith A. Perlinger, Shannon L. Bartelt-Hunt, Ramanitharan Kandiah, and Joel J. Ducoste from our Membership and Demographics committee published an article in Environmental Engineering Science, "Another Grand Challenge: Diversity in Environmental Engineering." Using data from the Engineering Management Database System of the American Society for Engineering Education (ASEE), they conclude that "African Americans, Hispanic Americans, and Native Americans are also underrepresented in environmental engineering faculty, and the extent of underrepresentation is greater than that for students." Only 1% of environmental engineering full professors were African American in 2016. I recently got promoted to full professor in Civil and Environmental Engineering at the University of South Florida (USF), and as Blaney and colleagues point out, I would not be counted in their study as a female, African American faculty member as the ASEE database uses data only for environmental engineering undergraduate programs. Yet here I am, the first African American president of AEESP.

It is important that our environmental engineering programs work on increasing diversity. I hope that someday soon USF will offer an undergraduate environmental engineering degree so that I can be counted in that database. AEESP must also think of ways to broaden participation in the organization, and this is something that I would like the Membership and Demographics committee to consider this year. From the professional water sector side, diversity challenges are also prevalent. Like academia, many of our utilities simply do not reflect the demographic make-up of the cities in which they are located and serve. The Water Environment Federation (WEF) launched InFLOW (Introducing Future Leaders to Opportunities in Water) at their 2018 Technical Exhibition and Conference, WEFTEC 2018, to identify students from underrepresented minority groups who are interested in professional careers in the water industry. AEESP Vice President Joel Ducoste spoke on a networking panel there organized for the 16 students recruited from Howard University, Tuskegee, and the University of South Florida/University of the Virgin

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www.aeesp.org/news

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www.aeesp.org/membership

Islands. As AEESP continues to build relationships with other professional organizations, more of these types of opportunities with our students should be pursued.

With guidance from the Membership and Demographics committee, AEESP has been collecting demographic data during membership application or renewal. The type of data collected can also evolve to ensure our committees, board, fellows, and awardees reflect diverse members from diverse disciplines and diverse institutions in diverse geographical locations. With time, our data can better inform us about who we are and represent. We can also kick start an AEESP community driven campaign that takes advantage of social media platforms to tell the stories of our amazing members, including our lifetime and sustaining members. We have been releasing video interviews of AEESP members via our AEESProfs YouTube channel, and I hope to reinvigorate an initiative from the Membership and Demographics committee that can potentially share quotes and images of every single one of our 885 members.

Over the summer, outgoing AEESP president Linda Weavers shared an online survey with our membership to gauge the state of the relationship of AEESP with *Environmental Engineering and Science* (EES), our official journal voted on by members of AEESP. Between July and September, 88 persons responded and we have started to process the data. While the main themes in the comments addressed Focus, Engineering & Science Education, Accessibility, Impact Factor, and Content, the multiple choice questions showed that 83% of respondents would like to see articles on environmental engineering and science education published in EES, and that 56% of respondents recommended publishing a special issue of selected papers presented at the conference. The board has charged the publications committee to create an implementable plan to strengthen the relationship with EES over the next two years, including measurable indicators for meeting signed MOU requirements and points raised by our membership over time. Some tasks might be small. For example, we received feedback this year that the fee for publishing color figures should be eliminated as the journal is not printed. EES agreed to do this since 2014 and it has been lost in translation to our members and EES. Publishing more environmental engineering and science education articles is not so simple, but we must look for synergies to jump start such an endeavor. For example, one suggestion is a special issue led by the Body of Knowledge (BOK) committee with papers invited by persons whose research reflects the different facets addressed in the new BOK.

In closing, I will once again quote from Earman Pearson in 1965. Back then he wrote, "it is a bright hope for our future when educators, who are not usually among the wealthier members of our profession, believe enough in our profession and Association to pay $100 to become a member." The board has not discussed raising membership fees from that 1965 rate; however, we have changed conference protocols to take 10% of registration fees. I have been charged with establishing an Endowment Committee whose goal would be to endow all of our awards. Already I can think of other awards needed for AEESP that honor those whose work broadens participation in our field. I wish for out of the box thinking to make this happen and/or one big check. Hopefully, by the next newsletter I have the data needed to tell you the exact amount of money we must raise to endow our awards. If you have ideas for this new committee please feel free to contact me. Email works (matrotz@usf.edu), but twitter is faster and more open (@matrotz). I look forward to serving AEESP this year and will hopefully meet you at our biennial conference at Arizona State University from May 14th to 16th, 2019.

AEESP Journal Environmental Engineering Science Spotlight

Derick G. Brown (Member of the AEESP Publications Committee), Catherine A. Peters (EES Deputy Editor), Susan J. Masten (Chair of the AEESP Publications Committee), Domenico Grasso (EES Editor-in-Chief)

The "spotlight" column draws attention to selected articles in *Environmental Engineering Science,* the official journal of the Association of Environmental Engineering and Science Professors (AEESP). Spotlight articles appear regularly in the journal as an Editor's Note, as well as in the AEESP newsletter. Through 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 April 2018 issue through the July 2018 issue of EES. Congratulations to all whose work is highlighted.

Xiang X., Ozkan A., Kelly C., and Radniecki T. (2018) "Importance of Microalgae Speciation on Biogas Production and Nutrient Recovery from Anaerobic Digestion of Lipid-Extracted Microalgae Biomass." *Environ. Eng. Sci.* 35, 382.

Treatment of residual microalgae biomass with anaerobic digestion has the potential to increase the sustainability of microalgae-derived biofuels through production of biogas, recovery of nitrogen and phosphorus, and stabilization of the biomass for disposal. In the first study of its kind, Xiang et al. (2018) demonstrated that the recovery of biogas and nutrients can be highly sensitive to the microalgae speciation and composition. By comparing lipid-extracted *Chlorella vulgaris* and *Cyclotella sp.,* they found that while the biogas yield was the same between the two species, the biogas production rate and nitrogen and phosphorus recoveries varied greatly. These results demonstrate that the microalgae speciation should be considered when examining nutrient recovery from anaerobic digestion of lipid-extracted microalgae.

Holmes R.R., Hart M.L., and Kevern J.T. (2018) "Removal and Breakthrough of Lead, Cadmium, and Zinc in Permeable Reactive Concrete." *Environ. Eng. Sci.* 35, 408.

Heavy metal contamination poses a significant risk to human health and the environment, with an important example being the leaching of metals from historic mining residuals. Holmes et al. (2018) examined the ability of a novel permeable reactive concrete (PRC) to remove lead, cadmium, and zinc from water. Through bench-scale testing with PRC columns, they demonstrated that precipitation, complexation, and sorption processes within the PRC completely removed the influent metals over 266 days of testing, at which time the metals had not yet been detected in the effluent of the first column. Cost estimates for application of PRC were shown to be 1/6th to 1/12th of the cost of comparable technologies, demonstrating that PRCs could greatly enhance the economics for remediation of heavy-metal contaminated water.

Lucas D., Petty S.M., Keen O., Luedeka B., Schlummer M., Weber R., Barlaz M., et al. (2018a) "Methods of Responsibly Managing End-of-Life Foams and Plastics Containing Flame Retardants: Part I." *Environ. Eng. Sci.* 35, 573.

Lucas D., Petty S.M., Keen O., Luedeka B., Schlummer M., Weber R., Yazdani R., et al. (2018b) "Methods of Responsibly Managing End-of-Life Foams and Plastics Containing Flame Retardants: Part II." *Environ. Eng. Sci.* 35, 588.

Flame retardants (FRs) are chemicals added to foams and plastics in consumer products, such as electronic equipment and furniture, to comply with flammability standards. Research over the past decades has demonstrated that halogenated FRs are associated with adverse health effects, such as endocrine disruption, immunotoxicity, reproductive toxicity, impaired fetal/child development, and cancer. While many toxic FRs have been replaced by other FRs, existing products containing toxic FRs will remain in service for decades. In a two-part series, Lucas et al. (2018a, b) review issues and best practices associated with the use and responsible disposal of wastes containing FRs and they identify basic and applied research needs.

Schwartz G.E., Hower J.C., Phillips A.L., Rivera N., Vengosh A. and Hsu-Kim H. (2018) "Ranking Coal Ash Materials for Their Potential to Leach Arsenic and Selenium: Relative Importance of Ash Chemistry and Site Biogeochemistry." *Environ. Eng. Sci.* 35, 728.

There are several available methods to quantify the leaching of heavy metals from coal ash, including the EPA's Toxicity Characteristic Leaching Protocol (TCLP), which is conducted at a single pH, the Leaching Environmental Assessment Framework (LEAF), which is conducted over a pH range with different liquid-to-solid ratios, and focused studies that attempt to mimic the local conditions found in coal ash impoundments. Schwartz et al. (2018) examined the ability of these protocols to roughly group the leachability of coal ash with respect to arsenic and selenium. They found that the methods showed promise in categorizing high- and low-leaching potential ash materials. They also demonstrated that the quantity of leached contaminant varied widely across the tests, indicating that the on-site geochemical conditions play a critical role in arsenic and selenium mobilization from coal ash.

Bielefeldt A.R., Polmear M., Canney N., Swan C., and Knight D. (2018) "Ethics Education of Undergraduate and Graduate Students in Environmental Engineering and Related Disciplines." *Environ. Eng. Sci.* 35, 684.

A recent national survey examined the education of undergraduate and graduate students on ethical and societal issues (ESI). In this survey, 158 environmental engineering instructors responded, representing 114 institutions. While 97% of the respondents taught ESI in their courses, only 30% felt that their program adequately teaches ESI to undergraduate students and only 20% felt this way for graduate students. Bielefeldt et al. (2018) discuss this data and provide results on the topics that instructors integrate ESI into their courses, with the goal of inspiring others to develop and integrate ESI-related topics into their courses.

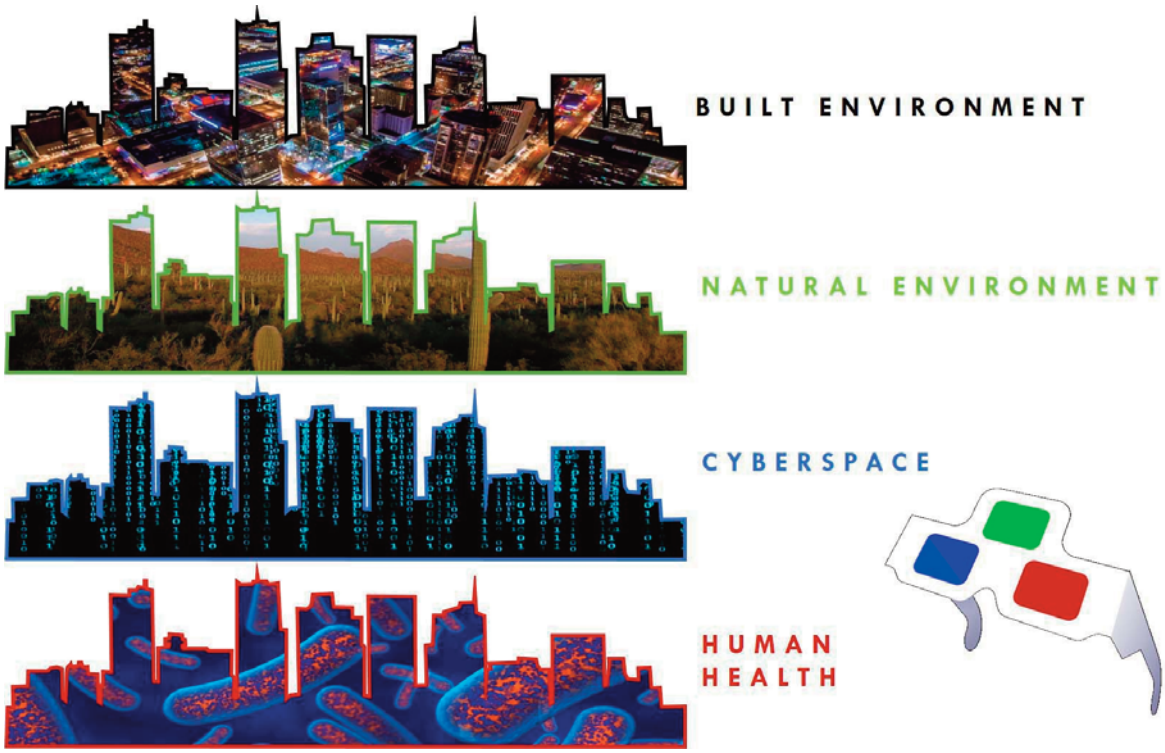
Blaney L., Perlinger J.A., Bartlet-Hunt S.L., Kandiah R. and Duscoste J.J. (2018) "Another Grand Challenge: Diversity in Environmental Engineering." *Environ. Eng. Sci.* 35, 568.

There is strong representation of environmental engineering and science within the 14 Grand Challenges for Engineering proposed by the National Academy of Engineering. These challenges include the development of affordable and clean energy, management of the nitrogen cycle and provision of clean water and sanitation. Blaney et al. (2018) provide an additional Grand Challenge for the environmental engineering community, asking us to look inward and focus on improving diversity. They provide and discuss data on the status of diversity within environmental engineering faculty and students and they make the case for including diversity as a critical component for enabling transformative solutions to the grand challenges in environmental engineering.

AEESP Distinguished Lecture Series with Prof. Lutgarde Raskin

Date	University	Contact
FALL 2018		
Sept. 14	**University of Pittsburgh** Co-Hosts: Carnegie Mellon University, Duquesne University	Radisav Vidic, vidic@pitt.edu
Oct. 8	**Princeton University** Co-Hosts: Columbia University, Drexel University, Manhattan College, Montclair State University, New Jersey Institute of Technology, NYU, Rutgers University, RPI, Stevens, Stony Brook, City College of New York, Villanova University	Jason Ren, zjren@princeton.edu
Oct. 9	**Johns Hopkins University** Co-Hosts: University of Maryland College Park, University of Maryland Baltimore County, Howard University	Edward Bouwer, bouwer@jhu.edu
Oct. 15	**The Ohio State University** Co-Hosts: University of Akron, Air Force Institute of Technology, Ohio University	Andrew May, may.561@osu.edu
Oct. 22	**Yale University** Co-Hosts: University of Connecticut, University of New Haven, Central Connecticut State University	Jordan Peccia, jordan.peccia@yale.edu
Oct. 24	**University of Massachusetts, Amherst** Co-Hosts: Northeastern University, Worcester Polytechnic Institute, Smith College, Roger Williams University, University of Rhode Island	Emily Kumpel, ekumpel@umass.edu
Oct. 26	**Clemson University** Co-Hosts: Georgia Tech, Furman University, University of South Carolina, Benedict College	Sudeep Popat, spopat@clemson.edu
Nov. 2	**University of South Florida** Co-Hosts: University of Florida, University of Central Florida, Florida Gulf Coast University	Jeffrey Cunningham, cunning@usf.edu
Nov. 5	**University of North Carolina at Chapel Hill** Co-Hosts: North Carolina State University, Duke University, North Carolina Central University	Orlando Coronell, coronell@unc.edu
Nov. 9	**Syracuse University** Co-Hosts: SUNY-Environmental Science and Forestry, SUNY-Buffalo, Cornell University, Clarkson University	Cliff Davidson, davidson@syr.edu
Nov. 12	**University of Toronto** Co-Hosts: York University, Ryerson University	Elodie Passeport, elodie.passeport@utoronto.ca
Nov. 28	**Rice University** Co-Hosts: University of Houston, Texas A&M, University of Texas at Austin	Lauren Stadler, lauren.stadler@rice.edu
SPRING 2019		
Feb. 25	**Arizona State University** Co-Hosts: Northern Arizona University, University of Arizona	Rebecca Muenich, Rebecca.Muenich@asu.edu
Feb. 27	**University of Southern California** Co-Hosts: UCLA, UC-Irvine, UC-Riverside	Adam Smith, smithada@usc.edu
19-Apr	**University of Illinois at Urbana-Champaign** Co-Hosts: Purdue University, University of Notre Dame, Rose-Hulman Institute of Technology, Bradley University, Illinois Institute of Technology	Yujie Men, ymen2@illinois.edu
24-Apr	**Marquette University** Co-Hosts: University of Wisconsin-Madison, University of Wisconsin-Milwaukee, Northwestern University	Patrick McNamara, patrick.mcnamara@mu.edu
6-May	**Stanford University**	Alexandria Boehm, aboehm@stanford.edu

For additional information, please contact Debora Frigi Rodrigues, Chair of the AEESP Lecturers Committee (dfrigirodrigues@uh.edu) or Brian Schorr, AEESP Executive Administrator (bschorr@aeesp.org).



CALL FOR ABSTRACTS

Environmental Engineers and Scientists see Cities in 4-D
2019 AEESP Research and Education Conference

Arizona State University, Tempe, AZ, May 14–16, 2019
https://aeesp-2019.engineering.asu.edu/

The conference theme, "Environmental Engineers & Scientists see Cities in 4-D", focuses on cities (e.g., urbanization impacts in developed and developing countries, dichotomies in services between urban and rural communities) and emphasizes the dimensions of the built environment, the natural environment, human health, and cyberspace (right). Traditionally, the major focus of environmental engineering and science has been on the dimensions and interactions of the natural environment and the built environment. The dimensions of the natural environment and built environment will continue to be important; however, these more traditional approaches will be balanced and integrated with new dimensions of increasing interest and importance, specifically human health and cyberspace. This is illustrated by active research on the interactions of the natural and built environments on the human microbiome, building microbiomes, and other "biomes," and rapid advances in electronics and computer science that allow for distributed sensor networks for real-time contaminant monitoring and Big Data analytics. "Environmental Engineers & Scientists see Cities in 4-D" also provides a coherent theme for integrating research and education. In addition to the research topics that fall under the theme, environmental engineering and science programs need a venue to share advances in education research and curriculum development, such as environmental engineering programs offering minors or certificates in sustainability, data science, and other complementary and emerging fields.

Abstract submission details

- Due December 5, 2018
- Link to Google Form (for abstract submission) will be available in October on conference website
- 300 word limit
- Abstracts should clearly explain how the research fits in the conference theme
- Abstracts will be evaluated for technical sessions and poster sessions
- Graduate students will be eligible for Best Poster awards
- Technical session tracks will be organized based on the "Cities in 4-D" conference theme and engineering education. Submitting authors are asked to identify the primary and secondary D's from the figure above or engineering education.
- Authors are encouraged to submit abstracts addressing engineering education
- Inquiries to: thboyer@asu.edu

2019 AEESP Award Nominations

Submitted by Rob Nerenberg (University of Notre Dame), AEESP Awards Committee Chair

The AEESP Awards Committee is pleased to call for nominations for 2019 AEESP awards. **Nominations may be submitted through January 15, 2019.** This early deadline is due to the AEESP 2019 Research and Education Conference being held early: it will be from May 14-16 at Arizona State University.

Please consider nominating a worthy colleague or student for one of these prestigious awards. All nomination materials must be submitted online. The submission link for each award, full instructions, and a list of prior award winners can be found on at http://aeespfoundation.org/awards. Unless stated otherwise below, awards will be presented at the AEESP 2019 Research and Education Conference.

A brief description for each award is provided below.

STUDENT AWARDS

CH2M/AEESP Outstanding Doctoral Dissertation Award

This award, endowed by CH2M, recognizes an outstanding doctoral dissertation that *contributes to the advancement of environmental science and engineering.* The award will consist of a plaque and cash prize of $1,500 for the student and a plaque and cash prize of $500 for the faculty advisor. Student and faculty award recipients who attend the award ceremony will receive up to $750 in travel support. In the case of faculty co-advisors, the $750 travel allotment must be shared. Faculty advisors should nominate dissertations completed under their supervision. Self-nominations by students will not be accepted. Only one submission is allowed per advisor is allowed. However, the nomination for this award is automatically considered for the Paul V. Roberts Outstanding Doctoral Dissertation Award as well (see below).

Paul V. Roberts/AEESP Outstanding Doctoral Dissertation Award

This endowed award is given annually to recognize a rigorous and innovative doctoral thesis that *advances the science and practice of water quality engineering for either engineered or natural systems.* Special consideration is given to physical-chemical process research and/or research that especially supports underserved communities, environmental awareness, or sustainable solutions. The award consists of a plaque and cash prize of $1,500, and a plaque and cash prize of $500 for the faculty advisor. Student and faculty award recipients who attend the award ceremony will receive up to $750 in travel support. In the case of faculty co-advisors, the $750 travel allotment must be shared. Faculty advisors are encouraged to nominate dissertations completed under their supervision, but must limit themselves to a single entry. Please note that each nomination for this award is automatically considered for the CH2M/AEESP Outstanding Doctoral Dissertation Award as well (see above).

AEESP Master's Thesis Awards

This award annually recognizes the two *most outstanding M.S. theses that contribute to the advancement of environmental science and engineering.* The prizes for each award include a plaque and cash prize of $1,000 for the student and a plaque for the faculty advisor. The award also provides up to $750 in travel support to student and faculty award recipients who attend the award ceremony. In the case of faculty co-advisors, the $750 travel allotment must be shared.

William Brewster Snow Award

This award, administered in conjunction with the American Academy of Environmental Engineers and Scientists (AAEES), is given annually to recognize an *environmental engineering graduate student who has made significant accomplishments in an employment or academic engineering project.* Nominees for this award must be enrolled part- or full-time in an environmental engineering graduate program pursuing a Master's degree in Environmental Engineering or a closely related degree program, or have completed a Master's degree in Environmental Engineering or a closely related program one year or less from January 1 of the year in which the Brewster Snow Award is presented. The award consists of a plaque and a $250 cash prize, which will be awarded at the AAEES Awards Luncheon in Washington, D.C., on April 25, 2019.

W. Wesley Eckenfelder Graduate Research Award

This AAEES award recognizes a student whose research *contributes to the knowledge pool of wastewater management.* The award selection is based on original, innovative research of publishable quality, as well as other factors including academic program performance, professional or community service, engineering project accomplishment, and future goals. Consideration for this award is open to M.S. and Ph.D. students performing research in the field of wastewater management. The recipient receives a plaque and cash honorarium of $1,500. The student's faculty advisor also receives a plaque. A travel allotment of up to $500 is also available to the student for travel to Washington, D.C., where the award will be presented at the AAEES Awards Luncheon on April 25, 2019.

Innovyze Excellence in Computational Hydraulics/Hydrology Award

This AAEES award, co-sponsored by Innovyze, recognizes a student *whose research contributes to the knowledge pool in the area of Computational Hydraulics & Hydrology.* The award selection will be based on original, innovative research of publishable quality. Specific criteria are listed on the http://aeespfoundation.org/awards web page. Consideration for this award is open to Master's and Ph.D. students. The recipient receives a plaque and a cash honorarium of $1,500 for the student, and a plaque and cash honorarium of $500 for the major faculty advisor. A travel allotment of up to $500 is also available to the student for travel to Washington, D.C., where the award will be presented at the AAEES Awards Luncheon on April 25, 2019.

EDUCATION, RESEARCH, AND PRACTICE AWARDS

AEESP Signature Awards

AEESP Award for Outstanding Contribution to Environmental Engineering & Science Education

This award recognizes an environmental engineering or science professor *who exhibits excellence in teaching scholarship and/or professional society educational initiatives.* Examples of such contributions include development or authorship of educational or instructional material or a text that enhances the student learning process, demonstrated effectiveness in course and/or curriculum development; and publication of original work, through peer-reviewed publications and/or presentations at professional meetings, that enhances the engineering education process or adds value to teaching methodology literature. Additional examples can be found on the awards web page. The recipient of this award will receive a plaque, a cash prize of $1500, and up to $750 in travel support to attend the awards ceremony.

AEESP Award for Outstanding Teaching in Environmental Engineering & Science

This award recognizes an environmental engineering or science professor who *exhibits excellence in classroom performance and related activities.* The re-cipient will receive a plaque, a cash prize of $1500, and up to $750 in travel support to attend the awards ceremony. Although open to nomination at any rank, the award is intended primarily to recognize a demonstrated commitment to teaching early in a person's career.

AEESP Outstanding Publication Award

This award recognizes the author(s) of a *"landmark environmental engineer-ing and science paper that has withstood the test of time and significantly influ-enced the practice of environmental engineering and science."* At least one of the authors must be living and previous winners are ineligible for a period of three years. The recipients of this award will receive plaques in honor of their achievements, a cash prize of $1500, and up to $750 in travel support to attend the awards ceremony.

Other AEESP Awards

Charles R. O'Melia AEESP Distinguished Educator Award

This award is given to an environmental engineering or science professor *who has a record of excellence in classroom teaching and graduate student advising; significant research achievements that have contributed to environmental engineering knowledge; and an outstanding record of influence through mentor-ing of former students and colleagues.* The recipient of this award will receive a plaque, a cash prize of $1500, and up to $750 in travel support to attend the awards ceremony.

Walter J. Weber, Jr. AEESP Frontier in Research Award

This award recognizes an environmental engineering or science professor who has *advanced the environmental engineering and science field through recognized research leadership and pioneering efforts in a new and innovative research area.* The selected recipient will receive a plaque and a cash prize of $1,500. The sponsor also provides up to $750 in travel support to be used by the recipient to attend the awards ceremony.

Perry L. McCarty AEESP Founders' Award

This award recognizes an environmental engineering and science professor who has made *"sustained and outstanding contributions to environmental engineering education, research, and practice."* The recipient of this award will receive a plaque, a cash prize of $1500, and up to $750 in travel support to attend the awards ceremony.

Steven K. Dentel AEESP Award for Global Outreach

This award recognizes *outstanding contributions and leadership by a faculty member through involvement in environmental engineering and science outreach activities to the global community.* The recipient of this award will receive a plaque and a cash prize of $1500.

Joint AEESP/AAEES Awards

The Frederick George Pohland Medal

This award honors an individual who has made *sustained and outstanding efforts to bridge environmental engineering research, practice, and education.* This award is jointly administered by AEESP and AAEES and members of AEESP and/or AAEES are eligible to receive this award. The award will consist of a medal, a $1,000 cash award, and reimbursement of travel costs of up to $1,000 for travel to the award ceremony.

Excellence in Environmental Engineering Education (E4) Award

This award, administered in conjunction with AAEES, recognizes an educator who has *excelled in the development of educational material or text that enhances the ability of students and/or practitioners to succeed as professional environmental engineers serving as practitioners in roles such as infrastructure design and project leadership.* The recipient will receive a monetary award of $1,000 with an up to $500 in travel support to attend the AAEES Awards Luncheon in Washington, D.C. on April 25, 2019.

2018 AEESP Award Recipients

Submitted by Rob Nerenberg (University of Notre Dame)

The 2018 AEESP Awards were presented on October 1 at the AEESP Meet and Greet Reception, at WEFTEC 2018 in New Orleans. Below is a list of the recipients. Congratulations to all award winners!

Thank you to the members of the Awards Committee and Sub-committees for thoughtful and thorough evaluation of the nominations: Kevin Finneran, Caitlyn Butler, Michelle Scherer, Des Lawler, Paul Bishop, David Cwiertny, Wen Zhang, Wenjie Sun, Jason He, Adam Smith, Srijan Aggarwal, Kyle Bibby, Brooke Mayer, Teng Zeng, Lynn Katz, and Rob Nerenberg. Thanks also to AAEES members Dick Magee, Webb Owen, John Tobiason, and Hector Fuentes, for serving on joint AAEES/AEESP awards committees, and to Liz Pohland for assisting with the selection of the Frederick George Pohland award recipient.

Student Awards

CH2M/AEESP Outstanding Doctoral Dissertation Award

This award is given annually to recognize an outstanding doctoral dissertation that contributes to the advancement of environmental science and engineering.

Dr. Carrie McDonough (advised by **Rainer Lohmann**), University of Rhode Island Bay Campus

Spatial Distribution, Air-Water Exchange, and Toxicity of Organic Pollutants using Passive Samplers

Paul V. Roberts/AEESP Outstanding Doctoral Dissertation Award

This award is given annually to recognize an outstanding doctoral dissertation that advances the science and practice of water quality engineering for either engineered or natural systems.

Dr. Masaru Nobu (advised by **Wen-Tso Liu**), University of Illinois at Urbana-Champaign

Omics-based characterization of complex anaerobic metabolism in methanogenic wastewater treatment

Dr. Masaru Nobu (center right) accepts the Paul V. Roberts/Outstanding Doctoral Dissertation Award from AEESP President Dr. Maya Trotz (right) with Advisor Dr. Wen-Tso Liu (center left) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

AEESP Master's Thesis Award

This award annually recognizes two most outstanding Master of Science theses that contribute to the advancement of environmental science and engineering.

Hannah Rolston (advised by **Lewis Semprini**), Oregon State University

Experimental Demonstration and Modeling of Aerobic Cometabolism of 1,4-Dioxane by Isobutane-Utilizing Microorganisms in Aquifer Microcosms

Hannah Rolston (center left) accepts the AEESP Master's Thesis Award from AEESP President Dr. Maya Trotz (right) with Advisor Dr. Lewis Semprini (center right) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

Sarah Gustitus (advised by **Prabhakar Clement**), Auburn University

A Fine Line Between Dispersion and Retention: Oil-Sediment Interactions in Nearshore Marine Environments

Sarah Gustitus (center right) accepts the AEESP Master's Thesis Award from AEESP President Dr. Maya Trotz (right) with Advisor Dr. Prabhaker Clement (center left) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

W. Wesley Eckenfelder Graduate Research Award

This award, jointly administered by AEESP and AAEES, is given annually to recognize a student whose research contributes to the knowledge pool of industrial wastewater management.

Dr. Andrew Pfluger (advised by **Junko Munakata Marr and Linda Figueroa**), Colorado School of Mines

William Brewster Snow Award

This award, jointly administered by AEESP and AAEES, is given annually by the American Academy of Environmental Engineers and Scientists (AAEES) to an outstanding environmental engi-

neering student currently pursuing or recently completing a Master's degree in Environmental Engineering or closely related degree program.

Maria Briones (advised by **Jim Mihelcic**), University of South Florida

Innovyze Excellence in Computational Hydraulics & Hydrology Award

This award is given annually by AAEES and is cosponsored by Innovyze to recognize an M.S. or Ph.D. student whose research contributes to knowledge in the area of computational hydraulics and hydrology.

Ahmed Abokifa (advised by **Pratim Biswas**), Washington University in Saint Louis

Education, Research, Practice and Outreach Awards

AEESP Award for Outstanding Teaching in Environmental Engineering and Science

This award is given annually to recognize excellence in classroom performance and related activities.

Ashlynn Stillwell, University of Illinois Urbana-Champaign

Ashlynn joined the University of Illinois in 2013, and her research is in the energy/water nexus. In addition to her PhD in engineering, she has a Master's in Public Affairs, and her passion is at the interface of engineering and public policy. For example, her course on "Water Technology and Policy" addresses laws and policy, providing context for the technical content. Her teaching scores have been consistently "excellent," and she has received several UIUC teaching awards.

Steven K. Dentel AEESP Award for Global Outreach

This award, established in 2014, is given annually to recognize outstanding contributions and leadership by a faculty member through involvement in environmental engineering and science outreach activities to the global community.

Arup SenGupta, Lehigh University

Natural arsenic contamination of groundwater has emerged as a major global crisis, and Arup SenGupta has developed the first regenerable polymeric/inorganic hybrid arsenic-selective adsorbent. More than one million people in both developing and developed countries drink arsenic-safe drinking water as a result of Dr. SenGupta's research. He has created several not-for-profit organizations related to water, sanitation, and education, and has had close engagement with researchers and policy makers, especially in Asia. These efforts have led to numerous awards, including the Grainger Prize Silver Medal (2007) and the ASCE Award of Merit.

Dr. Arup SenGupta (center) accepts the Steven K. Dentel AEESP Award for Global Outreach from AEESP President Dr. Maya Trotz (right) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

Excellence in Environmental Engineering and Science Education (E4) Award

This award, jointly administered by AEESP and AAEES, is given annually by the American Academy of Environmental Engineers and Scientists (AAEES) to an individual who has made a significant contribution to the profession in the area of educating practitioners.

Richard Valentine, University of Iowa.

Dr. Valentine's research has addressed disinfectant chemistry and the role of distribution systems on drinking water quality. He is passionate about teaching young scientists and engineers fundamental science and engineering skills that are needed to make the world a better place, but he also challenges them to better understand their role as professionals, neighbors, and community members. Though several of his graduates excel in academia, most work for consulting firms or water utilities. He has also has helped educate practitioners by partnering with entities such as the Metropolitan Water District (Los Angeles, CA), Montgomery-Watson, Stanley Consultants, CH2M, HDR Associates, Black and Veatch, City of San Francisco, Metropolitan Water Resources Authority (Boston, MA), Strand Inc., and many others.

Charles R. O'Melia AEESP Distinguished Educator Award

This award recognizes the significant contributions of Professor O'Melia to environmental engineering education and is awarded to an environmental engineering or science professor who has a record of excellent classroom teaching and graduate student advising; significant research achievements; and an outstanding record in mentoring of former students and colleagues.

Jim Mihelcic, University of South Florida

Jim Mihelcic is one of the leading researchers in the world in global water, sanitation, and hygiene (WaSH) and sustainability. In the US, he was doing pioneering WaSH research, building a renowned graduate program at USF before it was "trendy". Dr. Julie Zimmerman at Yale University writes, "Jim is dynamic, engaged, and passionate in all of his teaching and mentoring activities, but more importantly perhaps, he is passionately committed to leveraging the knowledge and skills of the Environmental Engineering discipline to advance global sustainability.

Dr. Jim Mihelcic (center) accepts the Charles R. O'Melia AEESP Distinguished Educator Award from AEESP President Dr. Maya Trotz (right) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

Walter J. Weber, Jr. AEESP Frontier in Research Award

This award is given annually to recognize an environmental engineering or science professor who has advanced the environmental engineering and science field through recognized research leadership and pioneering efforts in a new and innovative research area.

Peter Vikesland, Virginia Tech

With an "eye for fresh and new topics that are years ahead of others," Peter Vikesland has developed nano-based detection of pathogens, applied sustainability concepts to nanotechnology, and led an international effort to address one of the greatest public health challenges of the 21st Century—the rise and spread of antibiotic resistant microorganisms. Vikesland is also an outstanding citizen in the field of environmental engineering. He served as AEESP President, received "Super-Reviewer" (Best of the Best) honors from *Environmental Science & Technology*, was recently named Editor in Chief of Environmental Science: Nano, and was Elected Fellow of the Royal Society of Chemistry amongst many other honors.

Dr. Peter Vikesland (center) accepts the Walter J. Weber, Jr. AEESP Frontier in Research Award from AEESP President Dr. Maya Trotz (right) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

AEESP Outstanding Publication Award

This award is given annually to recognize the author(s) of a "landmark environmental engineering and science paper that has withstood the test of time and significantly influenced the practice of environmental engineering and science." At least one of the authors must be living and previous winners are ineligible for a period of three years. The selected recipient will receive a plaque.

Bill Arnold (University of Minnesota; at Johns Hopkins University at time of paper authorship)

Lynn Roberts (Johns Hopkins University)

For their paper

Pathways and kinetics of chlorinated ethylene and chlorinated acetylene reaction with Fe (0) particles. *Environmental Science & Technology*, 2000, 34 (9) pp 1794–1805

The work by Arnold and Roberts is considered a landmark in the use of zero-valent iron for remediation of organic contaminants. It produced insights into surface chemical processes and developed kinetic models that have improved the design of zero-valent iron permeable reactive barriers in the field. The paper has over 700 total citations, and between 2002 and 2017 it has averaged 42 citations per year. The impact of the Arnold and Roberts publication has been lasting, redefining the field.

AEESP/Mary Ann Liebert Award for Publication Excellence in Environmental Engineering Science journal

This award, established in 2017, is given annually to the authors of an outstanding paper published in *Environmental Engineering Science* during the previous calendar year. *Environmental Engineering Science* is the official journal of AEESP, and this award recognizes publication excellence among its members.

The winning paper is by Sharon Walker, formerly at UC-Riverside and now at Drexel, and her students Travis Waller and Chen Chen, for their article on the impact of titanium dioxide on gut microbiota:

Travis Waller, Chen Chen, and Sharon L. Walker. Food and Industrial Grade Titanium Dioxide Impacts Gut Microbiota. *Environmental Engineering Science*, 2017, 34 (8) pp 537-550

Dr. Sharon Walker (center) accepts the AEESP/Mary Ann Liebert Award for Publication Excellence in Environmental Engineering Science from AEESP President Dr. Maya Trotz (right) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

Perry L. McCarty AEESP Founders' Award

This award, established in 1991 and endowed in 2014, is given annually to recognize a member of AEESP who has made "sustained and outstanding contributions to environmental engineering education and practice."

Pedro Alvarez, Rice University

Pedro Alvarez has made numerous significant contributions to environmental protection over his 24-year academic career. He has written two bioremediation textbooks and directed over 60 graduate students. His research has addressed the bioremediation and nanoscience and technology, and Pedro currently leads the NSF-funded Nanosystems Engineering Research Center for Nanotechnology-Enabled Water Treatment (NEWT). He has given over 100 international lectures and keynote speeches and has received the AAEES Grand Prize for Excellence in Environmental Engineering and Science; the AEESP Frontiers in Research Award; the WEF McKee Medal for Groundwater Protection; and the SERDP cleanup project of the year award. In 2018 he was inducted into the National Academy of Engineering.

Fredrick George Pohland Medal

This award honors a member of AEESP and/or the American Academy of Environmental Engineers and Scientists (AAEES) who has made sustained and outstanding efforts to bridge environmental engineering research, education, and practice.

Charles Bott, Hampton Roads Sanitation District

Charles Bott left a successful academic career at the Virginia Military Institute to join Hampton Roads Sanitation District (HRSD) as Chief of Special Projects. During his nine years at HRSD, Charles has developed numerous wastewater innovations, with an emphasis on operational suitability, automation, and reliability. For example, he assessed and developed first full-scale sidestream anammox system in North America. He conceived and helped launch the Leaders Innovation Forum for Technology (LIFT), an international initiative managed by WE&RF and WEF to accelerate the adoption of new water technologies through development of communities of first end users. Charles' former students become highly sought-out for positions in consulting, industry, or public utilities.

Dr. Charles Bott (center) accepts the Frederick George Pohland Medal from AEESP President Dr. Maya Trotz (right) and AEESP Awards Committee Chair Dr. Rob Nerenberg (left). Photo Credit: Christine Prouty

Distinguished Service Awards

AEESP Committee Chairs

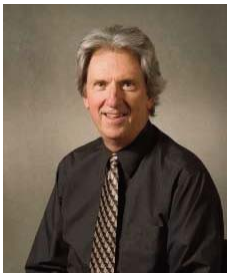
Tyler Radniecki, Oregon State University, for Outstanding Service as Chair of the AEESP Internet Resources Committee (2015)

Lindsay Soh, Lafayette College, for Outstanding Service as Chair of the AEESP Internet Resources Committee (2017)

Allison MacKay, Ohio State University, for Outstanding Service as Chair of the AEESP Environmental Engineering Program Leaders Committee

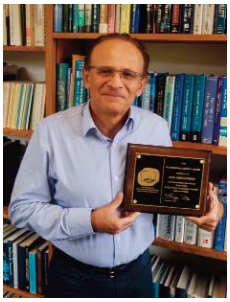
Steven Chapra, Tufts University, for Outstanding Service as Chair of the AEESP Fellows Committee

Ramesh Goel, University of Utah, for Outstanding Service as Chair of the AEESP Lectures Committee



Gene Parkin, University of Iowa, for Outstanding Service as Chair of the AEESP Foundation Investment Advisory Committee

James Stone, South Dakota School of Mines, for Outstanding Service as Chair of the AEESP M.S. Thesis Awards Sub-committee



Aria Amirbahman, University of Maine, AEESP for Outstanding Service as Chair of the AEESP Ph.D. Dissertation Awards Subcommittee

AEESP Board Members

Linda Weavers, Ohio State University Distinguished Service Award as President and AEESP Board Member

Paige Novak, University of Minnesota for Outstanding Service as AEESP Chief Information Officer and Board Member

Greg Lowry, Carnegie Mellon University for Outstanding Service as AEESP Secretary and Board Member

Jean MacRae, University of Maine, for Outstanding Service as AEESP Foundation Board Member

Andrea Ferro, Clarkson University, for Outstanding Service as AEESP Foundation Treasurer and Board Member

Others

Steven Mylon, Middlesex School Outstanding Service as AEESP Newsletter Editor

Professor Pedro Alvarez, Rice University AEESP Distinguished Lecturer Award

EESF/AEESP Student Video Competition Award

First place: "UIUC Water Warriors," University of Illinois, Urbana-Champaign

Second place: "Water Access Through Education and Renewable Energy (WaterE)," Arizona State University

Third place: "The Water Conservers," University of Illinois, Urbana-Champaign

2019 EESF/AEESP

Student Social Media Competition

Theme

Use Social Media to educate students and the public about the role of Environmental Engineers and Scientists in meeting the "grand challenges" facing our nation and the world

Audience

8th grade and higher students and the general public

Prizes

1st place - $1,000
2nd place - $750
3rd place - $500

Deadlines

Entry forms due **December 17, 2018**
Social Media Outreach Posting(s) submission due **January 21, 2019**
Final social media impact analysis report submission **April 1, 2019**

Undergraduate and graduate students are welcome to enter. For complete rules and guidelines, visit our website:

http://www.eesfoundation.org/student-social-media-competition

AEESP | Association of Environmental Engineering & Science Professors

Passing of Walter J. Weber, Jr., Gordon M. Fair and Ernest Boyce Distinguished University Professor, University of Michigan

This month our community lost one of the legends of our field. Walter J. Weber, Jr. was the Gordon M. Fair and Ernest Boyce Distinguished University Professor of Environmental Sciences and Engineering at the University of Michigan. He served on the AEESP Board of Directors twice (1970-1972 and 1988-1990), was the 1990 Distinguished Lecturer, and the recipient of the 2000 AEESP Founder's award. His pioneering achievements in research and education in physical/chemical treatment processes have left a legacy of contributions to our field including over 75 Ph.D. students, many of whom are AEESP members. He has received numerous awards, including the American Chemical Society's F.J. Zimmerman Award (1982), election to the National Academy of Engineering (1985), and the National Water Research Institute's Athalie Richardson Irvine Clarke Prize (1996).

AEESP recently endowed the Frontier in Research Award in his honor (http://www.aeespfoundation.org/awards/frontier-research). This award is given annually to recognize an environmental engineering or science professor who has advanced the environmental engineering and science field through recognized research leadership and pioneering efforts in a new and innovative research area.

Highlights of the AEESP Board of Directors

Spring 2018 phone call and Summer 2018 in-person meetings

Submitted by Karl Linden (University of Colorado Boulder, AEESP President-Elect) and Joel Ducoste (North Carolina State University, AEESP Vice-President)

The AEESP Board of Directors met by phone on May 11, 2018 and then in person on September 13 & 14 at Carnegie Melon University in Pittsburgh, PA. The Board was joined by Brian Schorr, AEESP's manager of business operations, from Technology Transition Corporation (TTC). The following is a summary of highlights from these Board of Directors meetings.

New Board Members
Secretary Greg Lowry reported back on the elections to the Board. The Board later welcomed the following newly elected members from the 2018 board elections:

Bill Arnold, University of Minnesota

Helen Hsu-Kim, Duke University

Amy Pruden, Virginia Tech

Membership Update
AEESP has 154 new members for 2018 (78 Regular Members, 7 Affiliate Members, 66 Student/PostDoc Members, and 3 Sustaining Members). The board agreed to offer reduced rates for members residing in countries categorized as lower middle and low income by the World Bank. As of September 2018, there were 885 members up to date on dues payments with an additional 226 members in arrears. Reminders will be sent for members in arrears. The Board encourages members to check their online membership profile to determine his/her status, renew his/her membership online if necessary, and consider multi-year renewal options now available at a discount.

Activities of Committees
The Board discussed the various committees that make AEESP work. Highlights from a few of our committees are presented below. You can find the listing of the AEESP committees and the coordinates for the committee chairs at (http://www.aeesp.org/contact/committees). Please consider volunteering your time on one of these committees and getting more involved and connected with AEESP.

Conference Planning: The Board reviewed plans for the 2019 AEESP Conference at Arizona State University from May 14th to 16th, and discussed the logistics, workshops, and special sessions planning with conference chair Trevor Boyer. The conference website is up and can be found here: https://aeesp-2019.engineering.asu.edu/

Environmental Engineering Program Leaders Committee: The board discussed the number of programs represented at the committee's annual meeting and webinar on May 29th 2018 held in conjunction with the 2018 CEE Department Heads meeting at Drexel, in Philadelphia.

Lectures Committee: Lut Raskin was selected as the 2018-2019 Distinguished Lecturer and kicked off the tour at the University of Pittsburgh right after the board meeting. The tour dates can be found here http://www.aeesp.org/dls-tour. Other lectures and collaborations with sister agencies were discussed including the upcoming events at WEFTEC and AWWA conferences.

Newsletter/Publications Committee: AEESP discussed and then completed a survey of our membership on our relationship with our official journal *Environmental Engineering Science*. Results from that survey were discussed and will be reported to our membership in the coming month. The MOU between AEESP and EES was located and reviewed. The schedule of the newsletters was amended to be on a February – June – October cycle.

Education Committee: The committee plans to define its major goals for the year and proposes to create a pair-mentoring program to connect assistant professors with senior faculty and will be working on the formation and implementation of this program.

Other Business
Some citizens of Flint, Michigan wrote a letter to the AEESP board requesting sanctions on one of our members. The board discussed, declined to get involved as it is outside of our scope, and wrote back of our interest in improving the skills of our membership in working with communities, suggesting they take their request to the home institution of the faculty involved.

New AEESP Officers
Maya Trotz (University of South Florida) assumed the role of President. The following new officers were installed following board elections:

President-elect: **Karl Linden**, University of Colorado Boulder

Vice President: **Joel Ducoste**, North Carolina State University

Secretary: **Shaily Mahendra**, UCLA

Chief Information Officer: **April Gu**, Cornell University

The Board is grateful for the service of outgoing Board members: Linda Weavers (President), Greg Lowry (Secretary), and Paige Novak (CIO). We look forward to their continued service to AEESP!

The AEESP Board of Directors. Back Row: Lutgarde Raskin, Linda Weavers, Karl Linden, Joel Ducoste. Middle Row: Greg Lowry, Brian Schorr, Amy Pruden, Timothy Strathmann. Front Row: William Arnold, Maya Trotz, Shaily Mahendra, Paige Novak, April Gu. Missing from picture is Helen Hsu-Kim.

New Faculty Appointments

Kerry Hamilton joins Arizona State

Dr. Kerry Hamilton joined the Biodesign Institute and the School of Sustainable Engineering and the Built Environment (SSEBE) at Arizona State University (ASU) as an Assistant Professor in August 2018. Before joining ASU, she was a post-doctoral fellow in the Department of Civil, Architectural, and Environmental Engineering at Drexel University in Philadelphia, Pennsylvania. She received her PhD in Environmental Engineering from Drexel in 2016. She also holds a Master's of Health Science (MHS) degree in Environmental and Occupational Hygiene and a Bachelor's degree in Public Health Studies from Johns Hopkins University. She is certified both in public health (CPH) and as an Engineer in Training (EIT). Her research interests are in the areas of environmental microbiology and quantitative risk assessment. She applies an interdisciplinary approach to quantify pathogenic microorganisms in environmental media using multiple culture-based and molecular biology methods, and develops risk models for informing complex engineering, regulatory, and policy decisions related to the intersection of environmental engineering and human health. Dr. Hamilton has applied these methods to a variety of topics, but has particular interests in opportunistic pathogens, antimicrobial resistance, and water reuse. She was a Fulbright Postgraduate Scholar to Australia (2015) and Environmental Health Fellow at the US Environmental Protection Agency from 2009 to 2011. She received the Drexel University Graduate College Award for most outstanding dissertation in 2017.

Josh Kearns joins NC State Global WaSH Cluster

Dr. Josh Kearns joined the North Carolina State University Department of Civil, Construction, and Environmental Engineering in January 2018 as Assistant Professor and member of the new NC State Global WaSH (Water-Sanitation-Hygiene) faculty cluster. Josh holds a BS in chemistry with a minor in environmental engineering from Clemson University, an MS in environmental biogeochemistry from UC-Berkeley, and a PhD in environmental engineering from the University of Colorado-Boulder.

His goals for the WaSH cluster include employing state-of-the-art chemical analytical techniques combined with laboratory- and field- based research methods to solve the most pressing environmental health issues affecting communities in resource poor settings worldwide. Josh's research interests include field and laboratory methods for detection of pollutants in drinking water sources along with the development of affordable and locally managed treatment technologies. Josh pioneered the use of biochar – a charcoal material generated from local biomass – as an adsorbent to remove chemical toxins such as herbicides, pharmaceuticals, and industrial pollutants in low cost water treatment.

Josh has over ten years' experience working in WaSH development with villages and community based organizations in southeast Asia. In 2019 Josh will pilot a summer field shortcourse for environmental engineering and science students on the topic of Water Supply & Treatment in Low Resource Settings with local partners in Guanajuato, Mexico.

Angela Harris joins NC State Global WaSH Cluster

Dr. Angela Harris joined the North Carolina State University Department of Civil, Construction, and Environmental Engineering in August 2018 as Assistant Professor. Harris is part of the interdisciplinary Global Water, Sanitation, and Hygiene (Global WaSH) faculty cluster. Her research seeks to better characterize human exposure pathways of fecal contamination and develop methods to interrupt pathogen transmission to protect human health. Harris has worked on international research projects in Tanzania, Kenya, and Bangladesh, and looks forward to collaborating with her fellow WaSH cluster professors in high-impact research to improve the lives of marginalized people.

Harris earned her PhD (2015) and MS (2010) in Environmental Engineering from Stanford University. She also received her BS in Chemical and Biomolecular Engineering from the Georgia Institute of Technology (2009). Harris most recently was a post-doctoral fellow at Stanford University and had the opportunity to teach undergraduate students in addition to continuing her research endeavors.

Courtney M. Gardner joins Washington State

Dr. Courtney M. Gardner joined the Department of Civil and Environmental Engineering at Washington State University as an Assistant Professor in August 2018. She received her Ph.D. (2017) and M.S. (2015) in Civil and Environmental Engineering from Duke University, where she worked with Dr. Claudia Gunsch to assess the dissemination of GMO-derived antibiotic resistance genes in agricultural and WWTP systems. Her research investigates the interactions and dynamics between human mediated stressors on environmental microbiomes in both natural and engineered systems, with a particular emphasis on surface water quality and stormwater management. Dr. Gardner is also interested in characterizing and applying the mechanisms driving microbial resilience to improve the efficiency of water treatment, bioremediation, and in situ microbiome engineering.

Fangqiong Ling Joins Washington University in St. Louis

Dr. Fangqiong Ling joined the Department of Energy, Environmental, and Chemical Engineering at Washington University in St. Louis in August 2018. Her appointment builds on the department's expertise in engineered aquatic processes and contributes to university-wide strengths in biological engineering and genome science.

Dr. Ling's research harnesses the data embedded in the urban water infrastructure microbiome and uses predictive analytics to enhance water system operation and public health surveillance. In her postdoctoral research at the Massachusetts Institute of Technology she developed a model that leverages biodiversity rules to estimate the size of the human population from bacterial DNA sequencing data of urban wastewater, and she played an important role in understanding the microbiology of a uranium-contaminated aquifer. Dr. Ling's doctoral research at the University of Illinois, Urbana-Champaign focused on the microbiome of drinking water infrastructure. That research led to developments of new monitoring technologies using NextGen sequencing and to discoveries of the underlying processes that control the composition of the drinking water microbiome. At Washington University, Dr. Ling is building a research program that integrates knowledge and tools from environmental microbiology, bioinformatics and machine learning to drive innovations in water infrastructure engineering.

Dr. Ling received her Ph.D. and M.S. in Civil and Environmental Engineering from the University of Illinois, Urbana-Champaign and her B.S. in Environmental Engineering from Tsinghua University. At the Massachusetts Institute of Technology she was the recipient of an Alfred P. Sloan Foundation Microbiology of the Built Environment Postdoctoral Fellowship.

Sarah Haig joins the University of Pittsburgh

Dr. Sarah Haig joined the Department of Civil and Environmental Engineering at the University of Pittsburgh in September. Dr. Haig's research combines environmental microbiology, environmental chemistry, and public health to improve water quality with a focus on drinking water systems. More specifically, the Haig research group aims to develop and advance our understanding of the drinking water microbiome: how to manipulate it to provide safer water in a more energy-efficient way, and understand its role in human health

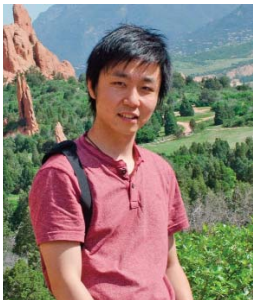
Dr. Haig completed her PhD, "Characterising the Functional Microbial Ecology of Slow Sand Filters Through Environmental Genomics", in September 2014 at the University of Glasgow in Scotland. She was also a Post-Doctoral Research Fellow (October 2014 – July 2018) at the University of Michigan in the groups of Lutgarde Raskin (Department of Civil and Environmental Engineering) and John LiPuma (Department of Pediatrics), where she focused on linking the drinking water microbiome to human health.

Dr. Haig has published several papers in leading journals in the fields of environmental engineering and microbiology and has given numerous presentations at national and international conferences. She has received continuous honors and awards for her research including Society for General Microbiology and IWA Young water professional prizes, a Lord Kelvin Adam Smith PhD scholarship, a Microbiology of the Built Environment fellowship from the Alfred P. Sloan Foundation and a Dow Sustainability fellowship.

Christy M. Dykstra Joins San Diego State

The Department of Civil, Construction and Environmental Engineering at San Diego State University is pleased to announce that **Dr. Christy M. Dykstra** has joined as an Assistant Professor of Environmental Engineering. Dr. Dykstra earned her PhD in Environmental Engineering in 2017 from Georgia Institute of Technology with support from a NSF Graduate Research Fellowship and a Water Environment Federation Canham Graduate Studies Scholarship. Her doctoral research advanced bioelectrochemical conversion of carbon dioxide to methane to improve energy recovery from anaerobic digestion. Dr. Dykstra's current research focuses on the development of new bioelectrochemical systems for energy and nutrient recovery from wastewater treatment, and the application of bioelectrochemical processes to a broad range of environmental engineering problems. Dr. Dykstra joins the growing Blue Gold research program dedicated to mitigating the effects of water scarcity.

Lei Zhao joins University of Illinois



Dr. Lei Zhao is joining the faculty of University of Illinois at Urbana-Champaign (UIUC) as an Assistant Professor in the Department of Civil and Environmental Engineering in October 2018. Lei Zhao received his Ph.D. (2015) in atmospheric and environmental science from School of Forestry and Environmental Studies at Yale University, where he worked with Professor Xuhui Lee on urban microclimate, land-atmospheric interactions, and boundary-layer meteorology. Before joining UIUC, Dr. Zhao was a postdoctoral research fellow in the Program in Science, Technology and Environmental Policy (STEP) at Princeton University, working with Professor Michael Oppenheimer on the mechanism of, impacts of, and adaptation strategies to urban environmental change and extremes. Dr. Zhao obtained his B.S. degree in Physics and Atmospheric Physics from Nanjing University in China (2009). His research concerns the physical and engineering processes in the Atmospheric Boundary Layer where most human activities and environmental systems are concentrated, with a particular focus on built surfaces and urban environments. He combines theory, numerical modeling, remote sensing and in situ observations, and cutting-edge statistical methods to study environmental fluid mechanics and land-atmosphere dynamics that relate to climate change, urban environments, microclimatology and hydrology, climate impacts and adaptation.

William Tarpeh joins Stanford

Dr. William A. Tarpeh joined the Department of Chemical Engineering at Stanford University as an assistant professor in Fall 2018. Tarpeh received his MS and PhD in Environmental Engineering from University of California, Berkeley and a BS in Chemical Engineering from Stanford. He recently completed postdoctoral training at the University of Michigan. Tarpeh's group develops and evaluates electrochemical approaches to resource recovery from "waste" waters at several synergistic scales: molecular mechanisms of chemical transport and transformation; novel unit processes that increase resource efficiency; and systems-level assessments to identify optimization opportunities. Additionally, the group investigates resource recovery to increase sanitation access in developing communities, urine separation for resource efficiency, and contaminant fate during resource recovery. Potential postdoctoral scholars and graduate students are welcome to contact Dr. Tarpeh at wtarpeh@stanford.edu if they are interested in joining the group.

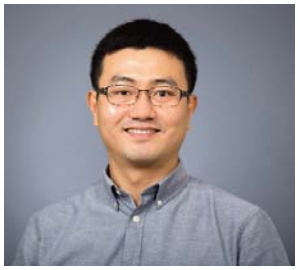
Four New Hires for the Dept. of Environmental and Sustainable Engineering at the University of Albany

The Department of Environmental and Sustainable Engineering (ESE) at the University of Albany, State University of New York (SUNY) was launched in 2017. Four new faculty have joined the Department at the Assistant Professor level this fall: **Drs. Aynul Bari, Rixiang Huang, Kyoung-Yeol Kim, and Yaoze Liu.**

Prior to joining the ESE faculty, **Dr. Aynul Bari** worked as a research associate (2014–2018) and postdoctoral fellow (2011–2013) in the School of Public Health in the University of Alberta, Canada and an NSERC Visiting Fellow in the Environment and Climate Change Canada (2010). Dr. Bari received his PhD (2009) and MSc (2004) in Environmental Engineering from the University of Stuttgart, Germany and BSc (2000) in Civil Engineering from Bangladesh University of Engineering and Technology (BUET). He is also a registered professional engineer (P.Eng.) in the province of Alberta, Canada (2017).

Dr. Bari has been involved in assessing emerging air quality issues in urban and industrial areas in order to explore the need for addressing clean air strategies to support the initiatives of achieving sustainable air quality. His current research focuses on understanding ambient levels and sources of per- and poly-fluoroalkyl substances (PFAS), influence of energy development on air quality and atmospheric deposition, long-term trend analysis, source characterization and apportionment and low-cost air pollution sensors. Other research interests include residential wood burning, particulate air pollution, indoor and outdoor behavior of air pollutants and air toxics, and public health risk assessment.

Dr. Rixiang Huang was a postdoctoral research scientist in Georgia Institute of Technology from 2014 to 2018. Dr. Huang received his PhD in Geology from Baylor University, his MS in Environmental Science from Chinese Academy of Sciences, and his BE in Environmental Engineering from Harbin Institute of Technology. His research revolves around elemental cycling in engineering/natural systems and sustainable waste management.



Dr. Kyoung-Yeol Kim received his PhD in Environmental Engineering from Gwangju Institute of Science and Technology (GIST, South Korea) in 2014. Prior to his appointment at the UAlbany, Dr. Kim worked at the Pennsylvania State University as a post-doc research fellow. Dr. Kim's research group is focusing on resource recovery from wastes and developing sustainable wastewater treatment processes with less energy input. His areas of expertise include microbial electrochemical technologies (METs) to convert wastes to valuable resources (electricity, hydrogen and chemical compounds) and membrane integrated wastewater treatment processes to produce high quality effluent with less energy consumption.

Dr. Yaoze Liu earned his Bachelor's and Master's degrees from China Agricultural University in Beijing. He was awarded his PhD in Agricultural and Biological Engineering from Purdue University, West Lafayette. Before joining University at Albany, he was a post-doctoral researcher at Purdue University. His research interests are: (1) improve and develop hydrologic/water quality models; (2) study the impacts of climate change and land use/land cover change on hydrology and water quality; (3) use simulation and experimental methods to study the impacts and improve the designs of urban green infrastructure practices and agricultural conservation practices; (4) develop decision support systems for cost-effective strategies of implementing urban green infrastructure practices and agricultural conservation practices to address hydrologic/water quality problems; and (5) address emerging problems at the water-energy-food nexus by studying the sustainability of urbanization and agricultural food production with focus on using stormwater and reclaimed wastewater at various scales.

Julie Korak joins University of Colorado

Dr. Julie Korak joined the Environmental Engineering Program at the University of Colorado Boulder in August 2018 and is rostered in the Department of Civil, Environmental, and Architectural Engineering as an assistant professor. Most recently, she worked in the Water Treatment Group at the Bureau of Reclamation, U.S. Department of the Interior in Denver, CO. At Reclamation, she conducted applied research and planning studies related to inorganic contaminant removal

and residuals management for decentralized drinking water systems, water treatment impacts in mining-impacted watersheds, and corrosion control in drinking water distribution systems. Dr. Korak is a licensed Professional Engineer and holds degrees in Chemical Engineering (B.S., 2009), Environmental Engineering (B.S., 2009), and Civil (Environmental) Engineering (M.S. and Ph.D., 2013 and 2014) from the University of Colorado Boulder. She received a National Science Foundation Graduate Research Fellowship in 2011.

Dr. Korak's research interests are broadly focused on water treatment engineering, spanning municipal drinking water, water reuse and industrial waste management. Her recent projects include developing holistic water treatment and waste brine management processes for ion exchange systems. Her research has also focused on using optical sensing techniques to characterize natural organic matter fate and reactivity in drinking water treatment processes.

Evan Thomas joins UC-Boulder

Dr. Evan Thomas joined the Environmental Engineering Program at the University of Colorado Boulder in August 2018 and is rostered in the Department of Civil, Environmental, and Architectural Engineering as an associate professor. Evan is also Director of the Mortenson Center in Engineering for Developing Communities and holds the Mortenson Endowed Chair in Global Engineering at the University of Colorado at Boulder. Evan has a BS in Aerospace Engineering (2005) and in Broadcast Journalism (2005), an MS in Aerospace Engineering (2006), and a PhD in Aerospace Engineering Sciences from the University of Colorado at Boulder (2009). He also has a Masters in Public Health from the Oregon Health and Science University (2014) and is a registered Professional Engineer.

Evan's technical background is in water and air testing and treatment applied in developing communities through to operational spacecraft. He founded SweetSense Inc., which is supported by USAID and the National Science Foundation, to develop and apply satellite connected sensors monitoring drinking water services. Daily, the team is monitoring one million people's water supply across east Africa. Evan's research has been funded by NASA, the National Science Foundation, the World Bank, USAID, the UN Foundation, the CDC, the United Kingdom Department for International Development, the Gates Foundation, and others.

Evan was previously an Associate Professor at Portland State University and Oregon Health & Science University from 2010-2018 (Asst. Prof. 2010-2016), founder of the SweetLab, and founding director of GlobalPDX. Evan was a civil servant at the NASA-Johnson Space Center in Houston, Texas from 2004-2010. At NASA, Evan was an aerospace engineer working on microgravity fluid management technologies and water recovery systems for spacecraft hardware flying on the Space Shuttle and International Space Station.

Nathaniel Chaney joins Duke

Dr. Nathaniel Chaney has joined Duke University's Department of Civil and Environmental Engineering as an Assistant Professor. Dr. Chaney's research harnesses the existing petabytes of global environmental data to improve understanding of the terrestrial water cycle. More specifically, he focuses on quantifying and uncovering the role of spatial heterogeneity in global hydrology. To this end, his group's research has three overarching themes: 1) rethink land heterogeneity in Earth system models 2) harness environmental data to characterize the observed spatial heterogeneity over land, and 3) assess the sensitivity of the hydrologic cycle to land heterogeneity. The tools that his group uses include numerical modeling, satellite remote sensing, machine learning, and high performance computing.

Prior to arriving at Duke, Dr. Chaney was a postdoctoral research associate in the program in Atmospheric and Oceanic Sciences at Princeton University and had a dual appointment as a visiting research scientist at the NOAA Geophysical Fluid Dynamics Laboratory. He obtained his undergraduate degree at U.C. Berkeley where he received a Bachelor of Arts in Atmospheric Sciences and Applied Mathematics. For his graduate studies, Dr. Chaney attended Princeton University where he completed a Ph.D. in Hydrology in the department of Civil and Environmental Engineering.

Manolis Veveakis joins Duke

Dr. Manolis Veveakis has joined the faculty of Duke University as an Assistant Professor of Civil and Environmental Engineering in Duke's Pratt School of Engineering. Dr. Veveakis's research focusses on fundamental and applied problems in environmental geomechanics, especially natural hazards, as well as the influence of man-made structures in environmental problems. Particular problems include understanding the mechanisms underpinning landslides and earthquake generation, as well as optimal –environmentally friendly- design of production and storage of energy resources. His work combines methods from applied mathematics, mechanics of solids and fluids, geotechnics and resource engineering, and computational science.

Before joining the Duke University faculty, Dr. Veveakis was a Senior Lecturer in the School of Petroleum Engineering of UNSW Australia. Prior to that, he was a Research Scientist in CSIRO, Australia. Dr. Veveakis holds a Diploma in Applied Mathematics and Physics, an MSc in Theoretical and Applied Mechanics, and a PhD in Geomechanics, all from the National Technical University of Athens in Greece.

Recognition of new AEESP Fellows — 2018

Please congratulate the new AEESP Fellows for 2018! These individuals were selected for this recognition based on their accomplishments in environmental engineering research, teaching and professional service, with emphasis on service within the AEESP. They will be formally acknowledged as new fellows at the 2019 AEESP conference (ASU, May 14-16, 2019). The citations written by their nominators are included below.

Nominations for AEESP Fellows for 2019 are open now through March 1, 2019. Details for the electronic application requirements are available at http://www.aeesp.org/fellows.

Dr. Michael Aitken, Professor, University of North Carolina

Dr. Aitken is a professor at the University of North Carolina in the Department of Environmental Sciences and Engineering, where he served as department chair from 2006 to 2016. He is an expert in environmental microbiology and biotechnology. Dr. Aitken has made extraordinary contributions to AEESP, especially during his term on the Board and his year as President of AEESP, in 2002. Through his leadership, Dr. Aitken has had enormous impact on the organization and the profession, resulting in major, lasting advancements. For example, he led the establishment of biennial AEESP conferences. Most importantly, Dr. Aitken led an AEESP task force to explore the establishment of a professional society for environmental engineering. Consistently, Dr. Aitken has been motivated by a desire to bring unity to environmental engineering, strengthening this very important profession and strengthening our collective voice in the world.

Dr. Lisa Alvarez-Cohen, Fred and Claire Sauer Professor of Environmental Engineering, UC Berkeley

Dr. Lisa Alvarez-Cohen is nominated for her sustained and seminal contributions to our understanding of microbial transformations of high risk xenobiotic chemicals and our control of their management through development of the practice and science of remediation practices that protect both the environment and public from harmful chemicals. She has demonstrated the utmost commitment to our profession through an impeccable service record at the national level with multiple organizations and agencies, including service to AEESP. She has also been an outstanding mentor to generations of students through her textbook, advising and research endeavors, as well as to other faculty in the environmental engineering and science community. Dr. Alvarez-Cohen meets, with honor and integrity, all four areas of distinction recognized by AEESP Fellows.

Dr. Amy Childress, Professor, University of Southern California

For advancing the science and technology of membrane-based desalination and wastewater reuse; specifically research on membrane distillation, forward osmosis, and pressure-retarded osmosis, and more recently providing vision and leadership to advance her area of research to consider a system-level view of how membrane processes used for a variety of critical water supply and reuse strategies can better integrate energy considerations. For her sustained and high level service to AEESP and the AEESP Foundation, which includes a large number of impactful leadership positions and responsibilities, and her service on other high-level national committees and in an editorial board capacity for several impactful scholarly journals. For educating future environmental engineers and scientists, her dedication to mentoring junior faculty, and efforts to deliver outreach activities designed for underrepresented groups.

Dr. Dionysios (Dion) D. Dionysiou, Herman Schneider Professor of Environmental Engineering, University of Cincinnati

Professor Dionysiou has made numerous contributions in the field of environmental engineering and science. His work in the fields of advanced oxidation technologies and nanotechnologies, radical chemistry, degradation of contaminants of emerging concern, and advanced functional materials has made significant impact at the global level. His contributions include research, education, service and professional practice. He has contributed hundreds of articles, proceedings, book chapters and editorials and his work has opened new directions and inspired many researchers around the world. His books covered emerging topics in the field. He has delivered numerous presentations around the world in conferences and institutions. He has served as editor, associate editor, or member of the editorial board of several journals in the field of environmental engineering and science. He has served as lead organizer or co-organizer of several conferences and scientific symposia, including ACS-AEESP symposia. He inspired many researchers, including junior researchers, to develop scientific symposia in national meetings. He has served in various leadership roles and committee memberships of various professional associations including AEESP, ACS, ASCE, AWWA, IWA, and WEF. He has trained a large number of graduate students, post-doctoral researchers, and visiting scholars in his laboratories.

Questions can be addressed to Susan Powers, Clarkson University; Chair, Fellows Steering Committee

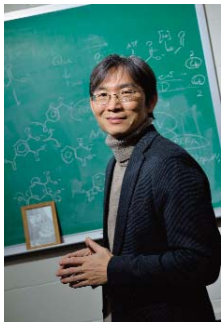
Daniel B. Oerther has been named a fellow of three professional societies

Daniel B. Oerther, Professor of Environmental Health Engineering at the Missouri University of Science and Technology, has been named a fellow of three professional societies in recognition of his sustained and impactful efforts to promote inter professional environmental health practice, research, and education. He was elected a Fellow of the Society of Environmental Engineers (based in the United Kingdom) for his significant engineering achievements in responsible charge as a professional engineer, including his award-winning work to provide point of use drinking water biosand filters for more than 80,000 villagers throughout Ixcan, Guatemala. For his international research in environmental health including his recent studies on the role of pathogen exposure and Afflation ingestion as environmental determinants of child stunting – causing low height for age – he was elected a Fellow of the UK-based Chartered Institute of Environmental Health. Founded in 1883, the nearly 9,000 global members of CIEH improve lives and demonstrate excellence across all areas of environmental health including food safety, housing, environmental protection, and occupational health and safety. Professor Oerther was selected as a lifetime honorary Fellow of the Academy of Nursing Education of the National League of Nursing due to his significant contributions to nursing education through excellence in inter professional environmental health teaching including his award-winning efforts to use the United States Department of State Diplomacy Lab as part of service learning and his integration of nursing science, practice, and policy as part of STEM (science, technology, engineering, and math).

AEESP members win ISME/IWA Bio Cluster Awards

All three winners of the 2018 ISME/IWA Bio Cluster Awards are AEESP members: Grand Prize winners Wen-Tso Liu and Trina McMahon and Rising-Star Prize winner Ameet J. Pinto. These awards are made for interdisciplinary research of unusual merit at the interface of microbial ecology and water/wastewater treatment.

Wen-Tso Liu is the Grand Prize Winner of the 2018 ISME/IWA Biocluster Award



Professor Wen-Tso Liu, the Arthur C. Nauman Endowed Professor in the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign, has been awarded an ISME-IWA Bio Cluster Award (Grand Prize — shared with Trina McMahon). The prize rewards interdisciplinary research of outstanding merit at the interface of microbial ecology and water/wastewater treatment.

Liu's research focuses on the water microbiome, specifically the ecological roles of microbes in different water systems, including watersheds, drinking water systems and wastewater treatment and reclamation systems. His work seeks to illuminate microbial diversity and the different metabolic functions they perform with the goal of influencing or controlling them to improve water cycling within natural and engineered systems and protecting public health.

Liu holds a B.S. (National Taipei University of Technology, Taiwan) in civil engineering, an M.S. (Rutgers University) in Environmental Science, an M.Eng. (University of California at Berkeley) in Environmental Engineering, and a Ph.D. (University of Tokyo, 1995) in Urban Engineering. He has been a professor at the University of Illinois since 2008.

"Professor Liu's research has had a profound impact on advancing our fundamental understanding of the interface of microbial ecology and water/wastewater treatment and exemplifies the intent of this award," wrote a nominator.

The award was presented to Liu at the IWA World Water Congress & Exhibition 2018 in Tokyo, Japan, September 16-21, 2018. Liu is invited to give an award lecture during the congress.

New edition of water and wastewater treatment text available

The second edition of the popular textbook *Theory and Practice of Water and Wastewater Treatment* (John Wiley & Sons) is now available. Co-authors are Ronald Droste and Ronald Gehr. The book has been fully updated and is suitable as a senior-level undergraduate text, thoroughly covering both water and wastewater treatment. Included is a fully-functional Lite version of the internationally acclaimed GPS-X wastewater treatment modelling software from Hydromantis. Available as an e-book and hard cover, with solutions manual for instructors. Details may be found at:

https://www.wiley.com/en-us/Theory+and+Practice+of+Water+and+Wastewater+Treatment%2C+2nd+Edition-p-9781119312383

Congratulations to GRC Environmental Sciences: Water Poster Winners

Christina K. Remucal — University of Wisconsin-Madison

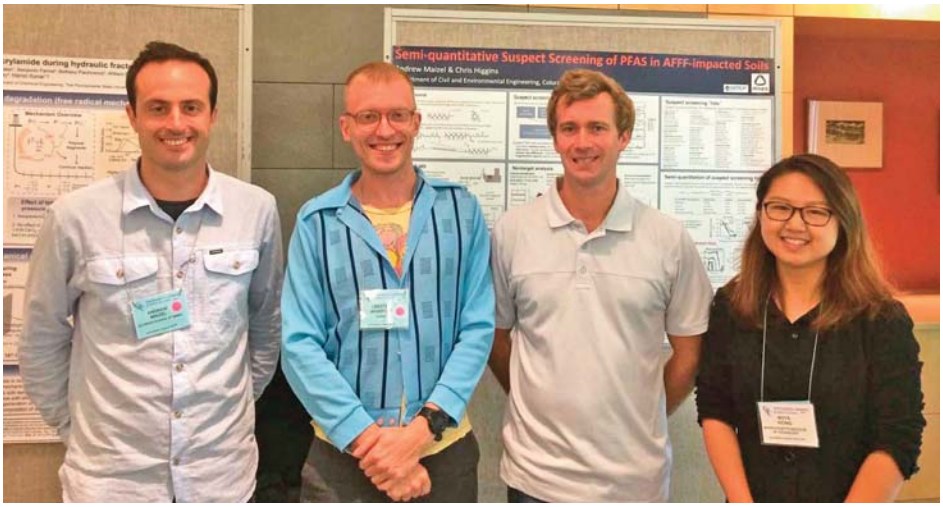
The Gordon Research Conference on Environmental Sciences: Water recognized four post-doctoral researchers for their excellent poster presentations at the biennial meeting held in Holderness, NH in June 2018. As a prize, the awardees had 24 hours to prepare a presentation of their work to the entire conference. Congratulations to the 2018 poster award winners:

Andrew Maizel (Department of Civil and Environmental Engineering, Colorado School of Mines) and Christopher Higgins; *Semiquantitative suspect screening to assess poly- and perfluoroalkyl substances in the environment.*

Cresten Mansfeldt (Eawag, Swiss Federal Institute of Aquatic Science and Technology), Stefan Achermann, Jean-Claude Walser, David Johnson, and Kathrin Fenner; *The influence of the solids retention time on community composition and micropollutant biotransformation.*

Garrett McKay (Department of Civil, Environmental, and Architectural Engineering, University of Colorado Boulder), Julie Korak, Paul Erickson, Douglas Latch, Kristopher McNeill, and Fernando Rosario-Ortiz; *The case against charge-transfer interactions in dissolved organic matter photophysics.* – Dr. McKay is currently a postdoctoral research at Colorado School of Mines.

Boya Xiong (Department of Civil and Environmental Engineering, Pennsylvania State University), Zachary Miller, Selina Roman-White, Travis Tasker, Benjamin Farina, Bethany Piechowicz, William D. Burgos, Prachi Joshi, Christopher Gorski, Liang Zhu, Prakash Purshwani, Zuleima Karpyn, Andrew L. Zydney, and Manish Kumar; *Polyacrylamide degradation during hydraulic fracturing at deep subsurface.* – Dr. Xiong is currently a postdoctoral researcher at Massachusetts Institute of Technology.



Dr. Andrew Maizel, Dr. Cresten Mansfeldt, Dr. Garett McKay, and Dr. Boya Xiong at the 2018 GRC on Environmental Sciences: Water.

New textbook: Ion Exchange in Environmental Processes

Arup K. SenGupta's new book '*Ion Exchange in Environmental Processes*' – 475 pages in eight chapters – is both a comprehensive introduction to the science of ion exchange and also an expert assessment of the latest developments in environmental ion exchange. Written for beginners as well as those already engaged in the field, the book provides stepwise coverage, advancing from the ion exchange fundamentals to trace ion exchange through the emerging area of hybrid ion exchange nanotechnology and others.

Ion exchange is as central to natural and biological systems as to the engineered processes. Over the last five decades ion exchange has permeated into a myriad of other growing fields including environmental green processes, nanotechnology, catalysis, synthesis of smart materials, and sensors. The book presents the "why" and "how" of multiple ion exchange phenomena with varying degrees of complexity through following eight chapters:

Chapter 1. Ion Exchange and Ion Exchangers

Chapter 2. Ion Exchange Fundamentals

Chapter 3. Trace Ion Exchange: Equilibrium

Chapter 4. Kinetics: Intraparticle Diffusion

Chapter 5. Solid- and Gas-Phase Ion Exchange

Chapter 6. Hybrid Ion Exchange Nanotechnology

Chapter 7. Heavy Metal Chelation and Polymeric Ligand Exchange

Chapter 8. Synergy through Ion Exchange

The book is published by John Wiley & Sons.

Environmental Research & Education Foundation™

Lighting a path to sustainable waste management practices

Environmental Research & Education Foundation Issues Targeted Request for Pre-Proposals Focused on Recycling

The Environmental Research & Education (EREF) Board of Directors has identified a high priority research topic in the area of residential recycling and has issued a request for pre-proposals on the topic to support the long-term needs and strategic direction of the solid waste field.

Residential recycling is an integral component of an integrated solid waste management system, but there are still knowledge gaps revolving around this aspect of waste management. There is a need to understand how to optimize processing, enhance material recyclability, and develop adequate and durable end markets. Beyond these facets, the demonstration of the overall value of residential recycling in terms of sustainability and economics is not well documented.

For the purposes of this RFP, residential recycling is defined as materials (primarily commodity recyclables such a fiber, metal, plastic, glass) that would typically be collected by refuse collection vehicles and transported to material recovery facilities (MRFs) where the collected materials would be processed and sorted. The post-MRF materials would then be utilized by a secondary manufacturer to process them into useful materials of a similar make-up to that of the recycled material. For this RFP, recycling does NOT include thermal or biological conversion of materials (e.g. waste-to-energy, composting, etc.) or wastes that would typically not go to MRFs (e.g. plastic film, food waste, e-waste).

Submissions of scientific research pre-proposals related to residential recycling are invited in the following areas:

- ***Human Behavior***
- ***Collection and Program Performance/Effectiveness***
- ***Definitions, Policies and Regulations***
- ***Reducing and Managing Contamination***
- ***Technological Innovation & Processing Optimization***
- ***Enhancing Material Recyclability***
- ***Development of End Markets***
- ***Recycling Value in terms of Economics and Sustainability***
- ***Life-Cycle Assessment***

Submittal Deadline and Additional Information

The submittal deadline for this RFP is 5:00 PM EST, December 3, 2018. The full RFP and additional submittal details can be found at www.erefdn.org.

Environmental Research & Education Foundation™

EREF

Lighting a path to sustainable waste management practices

The Environmental Research & Education Foundation Awards Eight Scholarships

The Environmental Research & Education Foundation (EREF) is the largest source of funding for scholarships and grants related to sustainable solid waste management in North America. The Scholarship Program recognizes students with academic excellence, professional involvement and an interest in sustainable solid waste management issues at the postdoctoral, doctoral and master's levels.

The EREF Board of Directors are pleased to announce the award of eight scholarships in 2018:

Rarosue Amaraibi
University of South Florida, MS

Chad Spreadbury
University of Florida, Ph.D.

Cassandra Champagne
University of Michigan at Ann Arbor, Ph.D.

Paige Taber
Clemson University, MS
Carl J. Apicella Scholarship

Girish Kumar
University of Illinois at Chicago, Ph.D.

Leandro Vigna
Yale University, MS
Robert J. Riethmiller/PTR Baler and Compactor Scholarship

Indu Venu Sabaraya
The University of Texas at Austin, Ph.D.

Kien Vu
University of South Carolina, Ph.D.

Applications will be considered from those who:

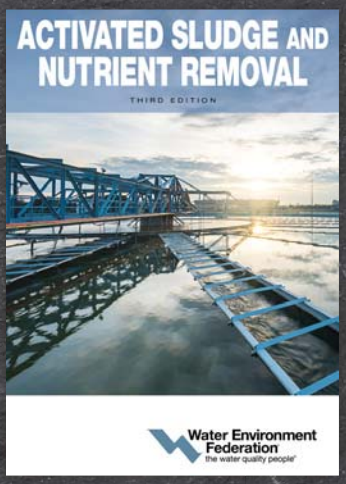
- will be this year or are now a full-time master's or doctoral student, and
- have a clearly demonstrated interest in solid waste management research. EREF defines solid waste management to pertain to municipal solid waste, construction & demolition waste, industrial waste (e.g. coal ash), WTE ash, etc. Note this definition does not include agricultural wastes or wastewater treatment plant sludge.

Doctoral scholarships are awarded up to $14,400 per year, paid monthly, and can be extended for up to 3 years from the initial award date. Master's scholarships are awarded up to $6,000 per year and can be extended for up to 2 years from the initial award date. Scholarship renewal is dependent upon satisfactory progress as determined by the student's academic advisor.

Applications for 2019 scholarships will be due in late spring 2019.
More information on how to apply to the EREF Scholarship Program can be found at https://erefdn.org/scholarship-program/how-to-apply/.

HIGHER EDUCATION RESOURCES FROM WEF

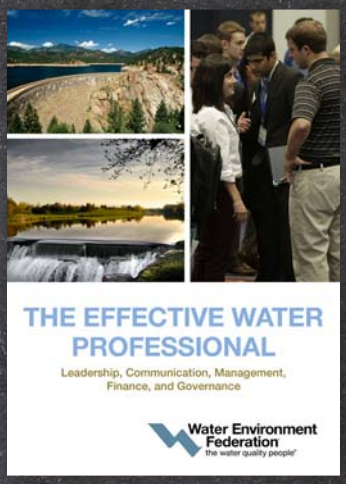
The Water Environment Federation (WEF) provides higher education resources for universities, colleges, and community colleges.



Activated Sludge and Nutrient Removal

Order No: P170004
ISBN: 978-1-57278-340-9

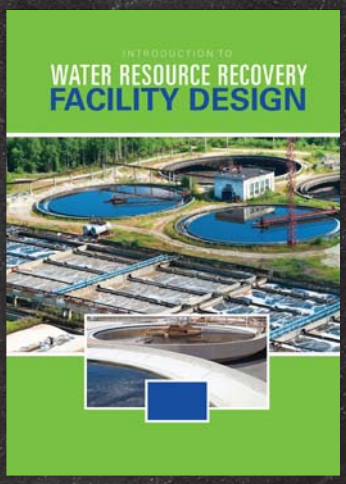
List Price: $125.00
Member Price*: $99.00



The Effective Water Professional: Leadership, Communication, Management, Finance, and Governance

Order No: P150005
ISBN: 978-1-57278-316-4

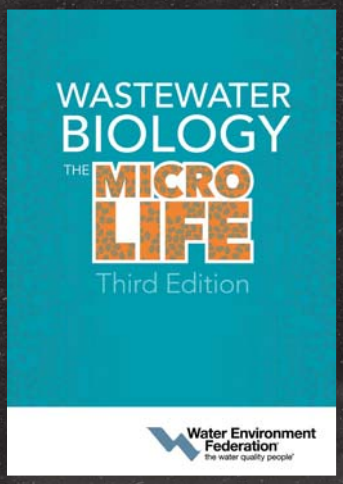
List Price: $155.00
Member Price*: $124.00



Introduction to Water Resource Recovery Facility Design

Order No: W140003
ISBN: 978-0-07-181981-7

List Price: $172.00
Member Price*: $137.00



Wastewater Biology: The Microlife

Order No: P170001
ISBN: 978-1-57278-337-9

List Price: $95.00
Member Price*: $76.00

Explore the complete catalog at www.wef.org/shopwef

** Member Price reserved for WEF members. To learn about this and other discounts, please visit www.wef.org/Membership*

Water Environment Federation
the water quality people

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	$100
Associate Professors	$75
Assistant Professors	$50
Students and Post-docs	$15

**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 submitting a completed application form and a brief two 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 $60.

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. Organizations or individuals desiring more information on Sustaining Membership should write to the Secretary, the President, or the Business Office.

Annual dues for Sustaining members are $500. Organizations or individuals desiring more information on sustaining membership should contact the Business Office at the phone number below.

Ready to join? You can apply for membership online!

https://aeesp.org/user/register

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

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AEESP Business Office
1211 Connecticut Avenue, NW, Suite 650
Washington, DC 20036
Phone: (202) 640-6591
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