Thank you to our Patrons!























Our Remarks will begin at 12:30 PM Eastern



Welcome to The 2024 AAEES Awards Ceremony and Conference



- Introduction from our Master of Ceremonies, Isreal Ray Hodges, Jr., P.E., CHMM, BCEE
- Welcome to Howard University: Student Introduction: Gabrielle Wood
- Opening Remarks: AAEES President Wendy A. Wert, P.E., BCEE
- A few words of thanks from our Executive Director, Dr. Daniel B. Oerther, P.E., BCEE, BCES
- E3S Honor Awards
- E3S Grand Prize Awards
- Superior Achievement Award Winner Announcement
- Superior Achievement Award Winner Presentation
- Intermission/Video Feature of the 40 under 40 Recognition and Foundation Scholarship Recipients
- Keynote Speaker: Dr. Kimberly L. Jones, BCEEM
- Environmental Communications Award
- Individual AAEES Award Announcements
- Conclusion from our Executive Director, Dr. Daniel B. Oerther, P.E., BCEE, BCES
- Closing remarks from our Master of Ceremonies, Isreal Ray Hodges, Jr., P.E., CHMM, BCEE













Welcome to Howard University





Preparing diverse, talented and ambitious students to learn, lead and embody excellence in truth and service.



GABRIELLE WOOD



3rd Year Undergrad at Howard University

Major: Chemical Engineering

Minor: Spanish

Hometown: Atlanta, GA

Karsh STEM Scholar

2023-2024 President of HU Water Environment Association



The HU Water Environment Association (HUWEA) is a student organization that advocates for environmental resource conservation and sustainable living on Howard University's campus through education, empowerment, and service.

HUWEA in Action



CWEA + DC Water Pump Station Tour







GET INVOLVED





HUWEA is starting a donation drive at the end of April!



Scan the QR Code to volunteer or find the link in our bio

Our last general body meeting this semester is

April 11th at 4-5:30pm

in LKD Reading room: Executive Board Elections



mail.com



AAEES President Wendy A. Wert, P.E., BCEE



Our AAEES President, Wendy, is a Board-Certified Environmental Engineer with the Los Angeles County Sanitation Districts. For the past 23 years, she has been working on programs that rely on public participation to integrate water supply, water reuse and wastewater facilities planning.

Today, she uses her position as an engineer to support outreach and education programs that explain how the work of the Sanitation Districts identifies community needs then applies engineering and scientific principles to meet them.

Wendy's journey started on a farm in Pennsylvania. Her father is a Navy veteran and, her mother is a retired schoolteacher. Wendy's mentor Debra Reinhart, Ph.D., P.E., BCEE, encouraged her to join the Academy. Wendy joined in 1997 and discovered a network of peers to help meet the challenges of our field. Family and mentors continue to inspire her career.

















Reflecting on Our Past

Celebrating Our Present

Looking Forward to Our Future

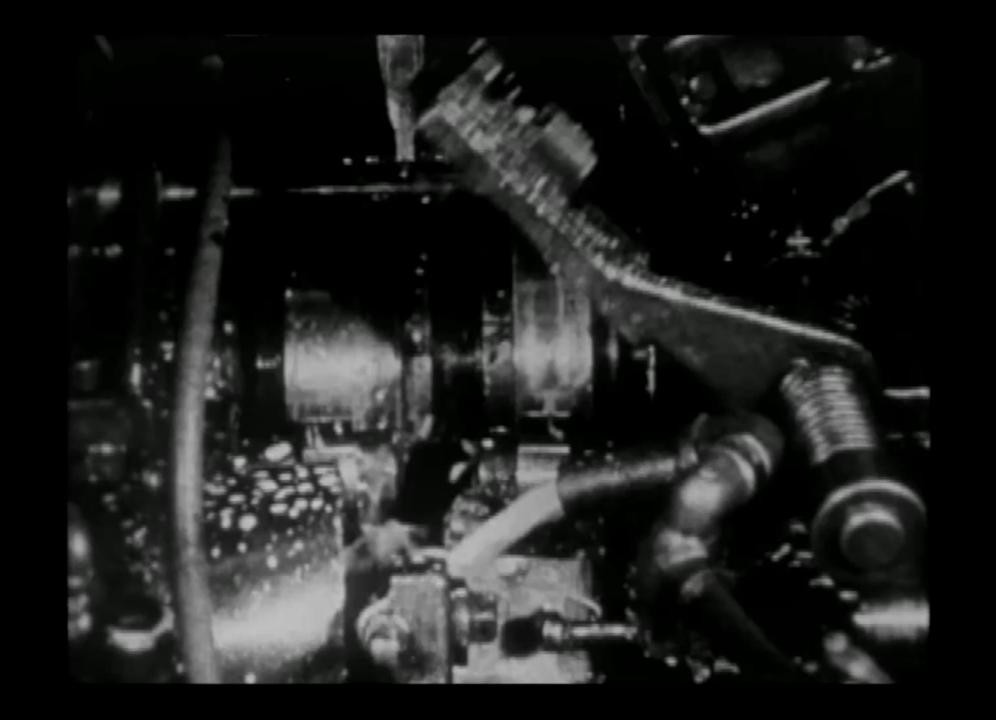


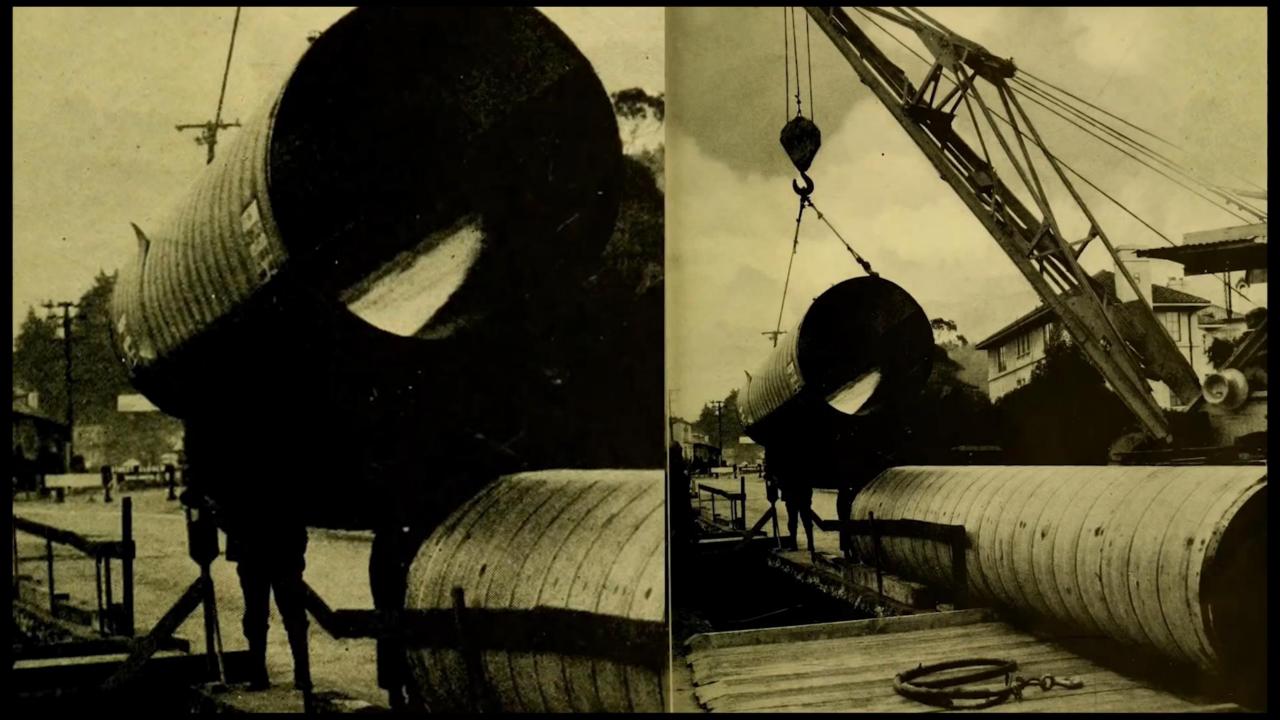
British Medical Journal



"the most important medical advance since 1840."

That's right; sanitation was chosen by medical professionals as the most important medical advancement over countless Nobel Prize-winning advances.







1955 History and Mission

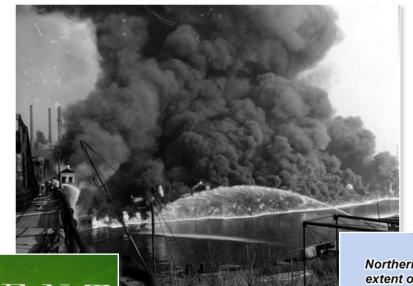


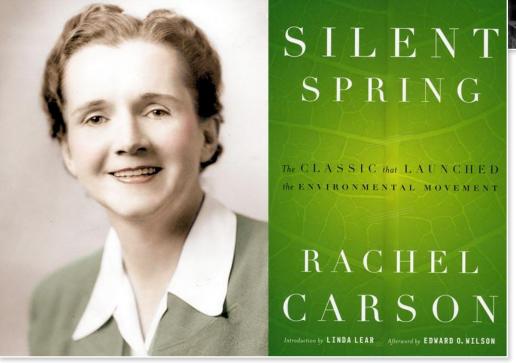
AAEES Founders in 1955

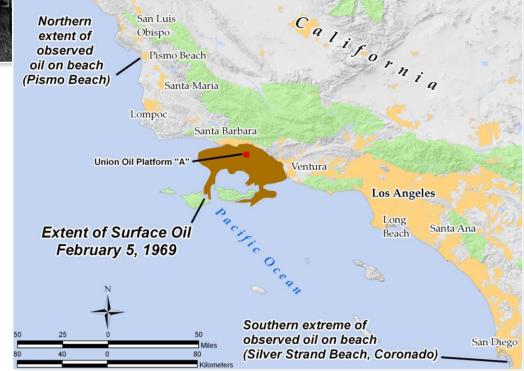




Environmental movement gathers momentum.



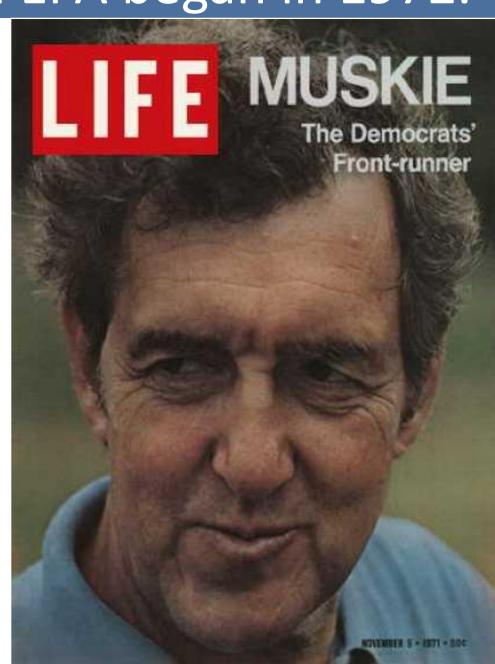




The Clean Water Act passed and EPA began in 1972.



Provides funding needed to protect water of the US.



Cleaned water would be used to replenish aquifers





California passed landmark legislation in 1989



Excess biogas converted to Renewable CNG



Academy recognition for carbon neutrality.







Governor Newsom visited the demo facility





Thank you to our Patrons























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- Closing remarks from our Master of Ceremonies, Isreal Ray Hodges, Jr., P.E., CHMM, BCEE















2024 E3S Winners



The Excellence in Environmental Engineering and Science™ Awards Competition exists to identify and reward the best of today's environmental engineering and science. Its criteria define what it takes to be the best in environmental engineering and science practices: a holistic environmental perspective, innovation, proven performance and customer satisfaction, and contribution to an improved quality of life and economic efficiency.

There are 9 categories in the E3s Competition.

- Honor Award Winners will be acknowledged.
- Grand Prize Winners will be asked to come up to the podium and say a few words (under 2 min.).
- The Superior Achievement for Excellence in Environmental Engineering and Science ™ Award will be presented to the best project across all categories. There will be a Super Achievement Presentation after all the E3S awards are presented. (15 min.)





E3S Honor Award Winners

2024 Honor Award Design (10f 2)



Entrant: The City of Kansas City, Missouri and Burns & McDonnell

Project: Todd Creek Wastewater Treatment Plant Project

Engineer in Charge: Jeff Keller, P.E.

Location: Kansas City, Missouri



"The Todd Creek Wastewater Treatment Plant was designed to meet new environmental requirements and growth demands, replacing an existing plant near the end of its useful life. The new plant can treat 4.6 million gallons/day of wastewater and is designed to minimize air, water and land environmental impacts. Through collaboration, teamwork and leveraging new technology, the design team was able to develop the project in a way that reduces land use, reduces energy and chemical consumption, and will produce a cleaner, more environmentally friendly effluent using new technologies."

2024 Honor Award Design (2 of 2)



Entrant: HDR

Project: Ashtabula Water Treatment Plant Reconstruction

Engineer in Charge: Adam Arnold, P.E.

Location: Ashtabula, Ohio



Struggling with short filter runtimes from underperforming upstream processes, the \$13 million Ashtabula Water Treatment Plant Reconstruction project replaced the existing flocculationsedimentation infrastructure with Ohio's first inclined plate settlers, to improve water quality and position the utility for more stringent regulations and potential changes in source (Lake Erie) water quality. The facility's filtration equipment was also upgraded including an integral automation/control system.

2024 Industrial Waste Practice Honor Award



Entrant: Los Angeles County Sanitation Districts

Project: WWRF Cleanup Site Remediation: Restoring a Brownfield and Paving the Way for a Regional Water Recycling Program

Engineer-in-Charge: Robert C. Ferrante, P.E., BCEE

Location: Whittier, California



A portion of the Districts' Warren Water Resource Facility was formerly operated as an oil refinery resulting in petroleum contamination. The property is now the preferred location of a large water purification facility, a partnership between the Districts and Metropolitan, that aims to recycle enough water for 1.5 million people. Through the Districts' efforts, the top 30 feet is now safe for construction while the Districts continue to remediate deeper soil and groundwater.

2024 Environmental Sustainability Honor Award



Entrant: Los Angeles County Sanitation Districts

Project: A.K. Warren Water Resource Facility

Engineer-in-Charge: Robert C. Ferrante, P.E., BCEE

Location: Carson, California



Introducing the A.K. Warren Water Resource Facility

In 2023, the Los Angeles County Sanitation Districts (Districts) celebrated its centennial and reflected on the evolution of their largest wastewater treatment plant, the *A.K. Warren Water Resource Facility* (Warren Facility), to the current state-of-the-art resource recovery facility.

For decades, the Districts and its partners have undertaken activities that help protect the environment and provide for a more sustainable world. Today, the Warren Facility truly converts waste into resources.

2024 Planning Honor Award



Entrant: Kimley-Horn and Associates, Inc.

and the Peace River Manasota Regional Water Supply Authority

Project: Feasibility and Routing Study for Phase 2B/2C

Regional Integrated Loop Pipeline Project

Engineer in Charge: Douglas H. Eckmann, P.E., BCEE, BC.WRE, F.ASCE

Location: Fort Myers, Florida



The PRMRWSA is expanding its regional interconnecting pipelines to serve member utilities, customers, and partners in four counties in SW Florida. Kimley-Horn performed a Feasibility and Routing Study for the Regional Integrated Loop Phase 2B and 2C Pipelines Project. The goal was to make the evaluation of alternative routes objective and quantitative. The team combined GIS data from multiple sources into a custom *Total GIS* database. Route segments were identified for detailed analysis. Segments were checked for intersections with GIS information and a calculated score was determined. The result was a robust and defensible ranking of alternatives for an alignment of a large diameter regional pipeline in an urbanized area.

Research Honor Award

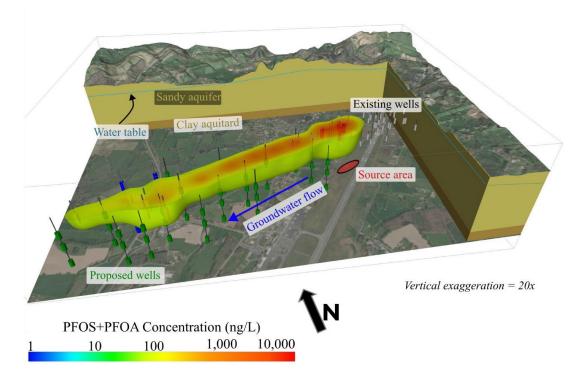


Entrant: HydroGeoLogic, Inc.

Project: PFAS - Decision Support System

Engineer-in-Charge: Varut Guvanasen, Ph.D., P.E.

Location: Reston, Virginia



HGL has developed an innovative technology known as the PFAS-**Decision Support System (PFAS-**DSS). PFAS-DSS integrates a database of PFAS compoundspecific properties and data analytics with conceptual and numerical modeling and computational optimization technologies to provide decision support throughout the investigation and mitigation process for sites contaminated with per- and polyfluoroalkyl substances (PFAS).

Small Projects Honor Award

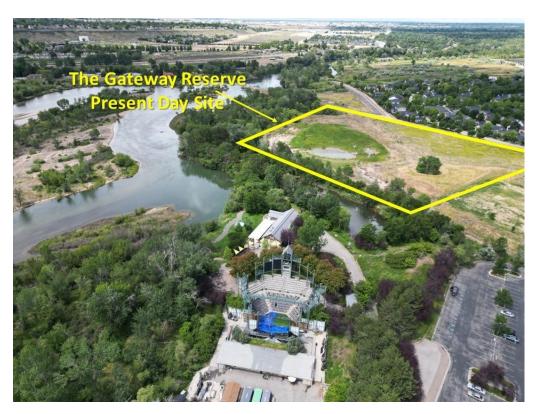


Entrant: Boelter Risk Sciences and Engineering LLC

Project: The Gateway Reserve Project

Engineer-in-Charge: Fred W. Boelter, CIH, PE, BCEE, FAIHA

Location: Boise, Idaho



The Sacred, The Brownfield, The Gateway Reserve (TiGeR): Recovering the sublime from the mundane

TGR has old sacred roots, resource extraction fingerprints, and an existential threat motivating a need for action. TGR is a place called "Cop-Cop-Pa-Ala" by indigenous Shoshone and Bannock, who gathered at the Boise river, traded peacefully, and lived with water, plants, and wildlife. TGR, non-commercial project, took 11 years and required cooperation of Federal, State, County, and City agencies, the public, and donations. TGR is a gem that connects, renews, and contributes to the common good.



Congratulations to all E3S Honor Award Winners



E3S Grand Prize Winners

2024 Industrial Waste Practice Grand Prize

AMERICAN
CADEMY
OF ENVIRONMENTAL ENGINEERS & SCIENTISTS®

Entrant: HDR

(1 of 2)

Project: South Sioux City Wastewater Treatment Facility

Engineer-in-Charge: Amit Shrivastava

Location: Sioux City, Nebraska



The \$39 million, 2-million-gallon-per-day South Sioux City Wastewater Treatment Facility features Nebraska's first aerobic granular sludge system, two 11.5-milliongallon covered anaerobic lagoons, aerobic digesters, solid processing facilities, ultraviolet disinfection, lift station improvements, and an outfall. Complete ahead of schedule and under budget, it treats current demand while flexible and expandable for future nutrient removal, industrial growth and additional wastewater integration.

2024 Industrial Waste Practice Grand Prize

AMERICAN
CADEMY
OF ENVIRONMENTAL ENGINEERS & SCIENTISTS®

Entrant: Aponowich, Driscoll & Associates, Inc. with

Sevenson Environmental Services, Inc (Contractor/Operator)

Project: NW Natural Gas Interceptor Trench Remediation Project

Engineer-in-Charge: Terence P. Driscoll, P.E., BCEE

Location: Portland, Oregon

(2 of 2)



From 1913 to 1956, the Portland Gas & Coke Company (GASCO), ran a manufactured gas plant on a site adjoining the Willamette River in Portland Oregon. Emulsified oil, organics, cyanide and high levels of iron were leaching into the river.

The project was designed by ADA to capture/treat the groundwater. An oilwater separator removes 84% of the oil. A unique air stripper design at elevated pH removes 97% of VOCs, 84% of SVOCs, iron oxidation and retains cyanide in solution for later destruction.

2024 Planning Grand Prize



Entrant: Kennedy Jenks

Project: Santa Monica Recycled Water Master Plan

Engineer in Charge: Dawn Taffler, P.E., LEED AP

Location: Pasadena, California



The City of Santa Monica's Recycled Water Master Plan (RWMP), developed by Kennedy Jenks, establishes a road map for future non-potable and potable reuse. A balanced portfolio was selected to optimize expansion of irrigation and indoor reuse, replenish local groundwater and deliver the remaining purified water to augment local drinking water supplies. The RWMP sets a precedent for innovative and sustainable water management, reinforcing the commitment to environmental stewardship and resilience.

2024 Environmental Sustainability Grand Prize



Entrant: HDR

Project: Omaha RiverFront Revitalization

Engineer-in-Charge: Chris Koenig, P.E.

Location: Omaha, Nebraska



The RiverFront Revitalization transformed three underutilized parks into a unified, amenity-rich open space, anchored by the Missouri River. The 72-acre, one-of-a-kind park added recreational amenities, improved multimodal transportation, and restored the park's character. Nebraska's first Envision project, verified Platinum, minimized environmental impacts while constructing over 170-year-old buried infrastructure, and a superfund site, in the heart of downtown, and through a global pandemic.

Safe Water Drinking Act 50th Anniversary



The 1974 Safe Water Drinking Act (SWDA)

In commemoration of the 50th Anniversary of the 1974 Safe Water Drinking Act (SWDA), we asked for projects that have been best at advancing the act. For the 2024 E3S Competition, all projects submitted in one of the E3S categories also had the opportunity to enter the "50th Anniversary of the 1974 Safe Water Drinking Act".

The 1974 Safe Water Drinking Act was established to protect the quality of drinking water in the United States and focuses on all waters actually or potentially designed for drinking use, whether from above ground or underground sources.

Grand Prize in Safe Water Drinking Act 50th **Anniversary**



Entrant: Los Angeles County Sanitation District

Project: A.K. Warren Water Resource Facility

Engineer in Charge: Robert C. Ferrante, P.E., BCEE

Location: Carson, California



Introducing the A.K. Warren Water Resource Facility

The evolution of the Warren Facility demonstrates how collaboration between agencies, regulators, municipalities, energy providers, and community groups can help facilities become more sustainable. In the future, essentially everything that comes into the facility would be recycled into resources – water, compost, and green energy.

Water recycling is so important to the future sustainability of California that Governor Newsom toured the Warren Facility. (see photo)



Superior Achievement Award

2024 Superior Achievement Award





Project: From the Laboratory to the Field - STAR Treatment of PFAS in Soils

Entrant: Savron, a division of Geosyntec Consultants International, Inc.

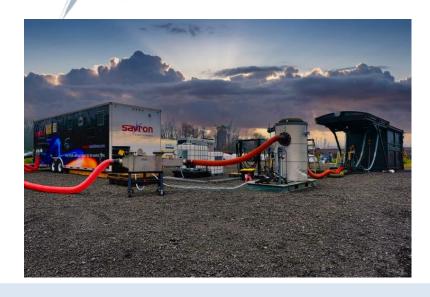
Location: Cambridge, Ontario, Canada

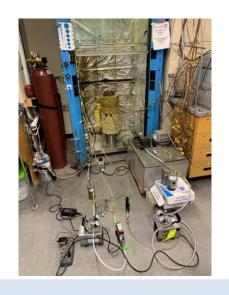
2024 Superior Achievement Award



savron

From the Laboratory to the Field – STAR Treatment of PFAS in Soils







Through laboratory and field studies, smoldering-based thermal treatment was demonstrated to destroy per- and polyfluoroalkyl substances, the "forever chemicals" in soils. Of utmost importance to the DoD funding agency, ESTCP and SERDP, was understanding the mass balance of PFAS destruction.



fast, simple, safe, and better for the environment

From The Laboratory to the Field-STAR Treatment of PFAS in Soils



What Are We Doing? Laboratory/Field and Project Direction





Brian Harrision

Laura Kinsman



Joshua Brown

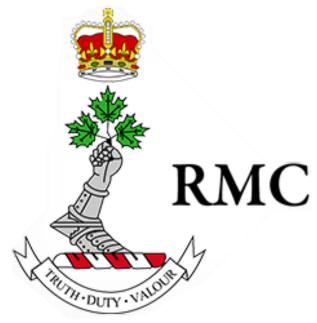
David Major



Jorge Gabayet



Where and What Happened to PFAS? Analytical





Kela Webber



David Patch



Where's the Fluoride?

Particle Induced Gamma Emission (PIGE)/ Spectroscopy

Charbel Abou Khalil





Kyle Doudrick



Graham Peaslee

Liliya Chernysheva

Gunnar Brown



Is Their PFAS/VOF in the Gas?

Targeted and Not-Targeted Analysis





Kurt Pennell



Kate Manz



Inspiration



Jason Gerhard



Funding Partner



Strategic Environmental Research and Development Program



Environmental Security
Technology Certification Program



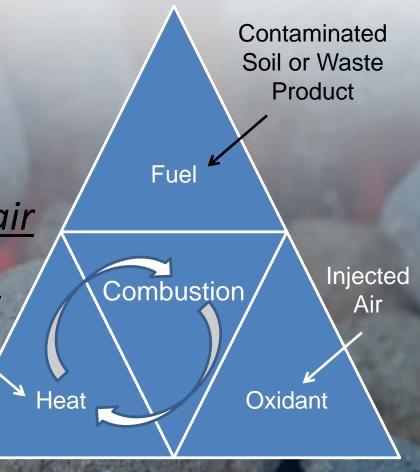
Smoldering Combustion

- Smoldering is a <u>flameless</u>, <u>self sustaining</u>, <u>energy efficient</u>, <u>exothermic combustion</u> <u>reaction</u>
- Converts carbon compounds to CO₂ + H₂O
- Requires a <u>porous media</u>, <u>organic fuel</u>, and <u>air</u>
- Soils mixed with hydrocarbons <u>behave like a</u>

BBQ

Heater Element (for ignition only)

Starts with <u>small input</u> of energy





 $PFAS \xrightarrow{HEAT} HF + shorter chain compounds$

Mineralization

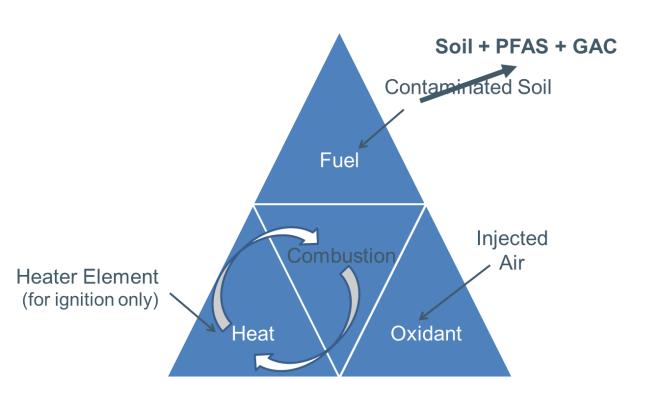
- Increases with Temp > 700°C
- Maximizes at Temp > 900°C

But PFAS not a smolderable fuel

Requires a surrogate fuel

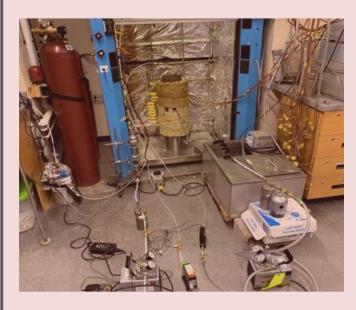
What About Spent GAC?

 A potential waste product that contains PFAS





Key Project Phases



Phase 1: Lab Column Tests

- Fluorine Mass Balance
- CaO Optimization



Phase 2: Intermediate Scale

- Heterogeneity
- Scaling



Phase 3: Pilot Scale Tests

- Heterogeneity
- Field Deployable



Phase 1 – Lab Column Results Key Results

Achieved Smoldering Temperatures

>900°C GAC at 40-60 g/kg soil

Targeted PFAS Analytes:

>99.9% reduction, and below detectation limits

PIGE Spectroscopy

- 95.6 >99.9% reduction of F mass in instances without CaO amendments
- No change of F mass with CaO (HF sequestered as CaF₂)

Emissions

- <0.02 0.13% of initial F mass, lower with CaO soil amendment</p>
- Consistent with less HF and shorter chain compounds produced

Mass Balance (F)

- 68-109%, *without* CaO
- 80-128% with CaO

Phase 3 – Pilot Test Key Results



- Project Site: CFB Located in Ontario
- Equipment: 10 m³ Pilot Scale Hottpad™
- Feedstock: PFAS Contaminated Site Soils (20 m³ total)



Phase 3 – Pilot Test Key Results

Soil Results

- >99.9% removal to near or below detection limits of targeted analytes
- Confirmed fluorine sequestered in soil as CaF₂

Emissions Results

- <0.2% of total fluorine emitted as PFAS
- ~1% of total organic fluorine emitted as HF
- Air treatment by GAC

Future Field Demonstrations

- Edwards Air Force Base, CA (April 2024)
 - 10 pilot tests test range of PFAS concentrations and soil types

- Joint Base Elmendorf-Richardson, AK (May 2024)
 - 500 m3 PFAS soil treatment.

- Joint Base Cape Cod, MA, Fall 2024
 - In situ smoldering of PFAS source areas



Effective and Robust

- Good understanding of fate of PFAS during smoldering
- Simple process, on-site treatment
- High contaminant destruction efficiency
- Minimal PID in emissions
- Treat co-contaminants in addition to PFAS

Safe and Sustainable

Self-sustaining process = less energy use



Environmental Restoration

Demonstration of Smoldering Combustion Treatment of PFAS-impacted Investigation-Derived Waste

Intermission



At this time, we will take a 15-minute intermission so you can stretch your legs, grab a coffee or send an email.

During the break, we will be displaying our 40 under 40 Recognition Program Recipients and The Environmental Engineering and Science Foundation Scholarships Recipients



40 Under 40 Recognition Program



The AAEES 40 Under 40 Recognition Program was introduced to recognize talented individuals who have, either personally or as part of a team, been responsible for helping to advance the fields of Environmental Science or Environmental Engineering in a demonstrable way within the last 12 months. Winners are chosen by a panel of past recipients who weigh equally business successes and civic/philanthropic activities.





Muhammad Ali, Ph.D.

Martin Naughton Assistant Professor of Environmental Microbiology Trinity College Dublin, Ireland and Cofounder Mawardna LLC, Saudi Arabia



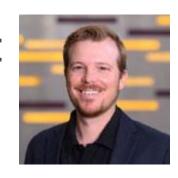


Adib Amini, Ph.D., P.E., ENV SP, BCEE Program Director University of Wisconsin - Madison





Aaron William Bivins, Ph.D., P.E., BCEE Assistant Professor Louisiana State University





Manisha Choudhary, Ph.D.
Postdoctoral Research Associate
University of Maine





Ashutosh Deshpande, REP, ENV SP, QISP, AAEES Member Environmental Manager (Compliance and Sustainability) Trihydro Corporation





Cecilia Maria Dominguez, P.E.

AAEES Member

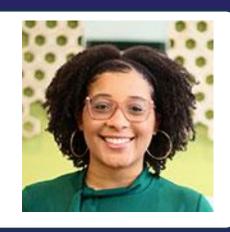
Operations Engineer

Los Angeles County Sanitation Districts



The Rising Stars in Environmental Engineering and Science

Danielle Dorley
Engineering Associate
Los Angeles County
Sanitation Districts





Nicole L. Fahrenfeld, Ph.D.

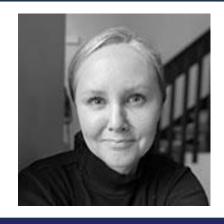
AAEES Member

Associate Professor
Rutgers, The State University of New Jersey





Ashley Geesman
Water/Wastewater Engineer
HDR





Mohamed A. Ghorab, Ph.D. AAEES Member

Toxicologist Scientist
U.S. Environmental Protection Agency (EPA)





Katie Greenstein, P.E., Ph.D.
Water Quality Specialist and Water/Wastewater
Engineer
HDR





Kerry Hamilton, Ph.D.
Assistant Professor
Arizona State University





David Hanigan, Ph.D.

AAEES Member

Assistant Professor
University of Nevada



The Rising Stars in Environmental Engineering and Science

Katie Marjanovic, Ph.D., P.E., BCEE Board Certified Environmental Engineer Los Angeles County Sanitation Districts



The Rising Stars in Environmental Engineering and Science Only District Control of the Control

Colleen Naughton, Ph.D.
Assistant Professor
University of California
Merced





Justin Rak-Banville, M.Sc., MBA, P.Chem, P.Eng., EP AAEES Member

Director, Treatment & Facilities, Western Canada WSP Canada Inc.



The Rising Stars in Environmental Engineering and Science

Adam Smith, Ph.D.

Associate Professor and Director of the Environmental Engineering Program University of Southern California



The Rising Stars in Environmental Engineering and Science Only Description

Mahmudul Hasan, Ph.D.
Chief Technical Officer
Baltimore City Department of Public Works





Greg Lackey, Ph.D.

Research General Engineer

U.S. Department of Energy, National Energy Technology Laboratory





Jiayu Li, Ph.D. Assistant Professor University of Miami



The Rising Stars in Environmental UNIDIOR Engineering and Science

Mengyan Li, Ph.D.

Associate Professor, Department of Chemistry & Environmental Science
New Jersey Institute of Technology





Kevin Orner, Ph.D.

Assistant Professor Wadsworth Department of Civil & Environmental Engineering West Virginia University





Saumik Panja, Ph.D., AAEES Member Assistant Biosafety Officer University of California San Francisco





Taylor E. Rycroft AAEES Member

Research Environmental Engineer
US Army Engineer Research and Development Center,
Environmental Laboratory





Kelly T. Sanders, Ph.D.

Associate Professor and Dr. Teh Fu Yen Early Career Chair University of Southern California





Matthew Scarborough, Ph.D.

Gregory N. Sweeny Green and Gold Professor of Civil Engineering and Assistant Professor University of Vermont





Amalia Terracciano, Ph.D., P.E., AAEES Member Environmental Engineer CDM Smith





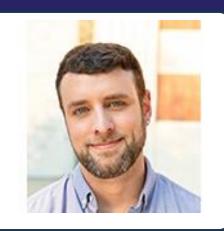
Ryan Antonio Thomas, Ph.D. Emerging Contaminants Principal Parsons Corporation





Adam Smith, Ph.D.

Associate Professor and Director of the Environmental Engineering Program University of Southern California





Heather Stewart, Ph.D., P.E. Process Engineer
Jacobs





Gabriel Trejo, P.E.
Principal Water Engineer
Arcadis





Lee Voth-Gaeddert, Ph.D. Assistant Research Professor Arizona State University





Xing Xie, Ph.D. Carlton S. Wilder Associate Professor Georgia Institute of Technology





Boya Xiong, Ph.D.
Assistant Professor
University of Minnesota





Yang Yang, Ph.D. Assistant Professor Clarkson University





Kaushal Parbhoo, P.E. Regulatory Planning and Compliance Section Manager Los Angeles Department of Water and Power





Announcing the 2023 Environmental Engineering and Science Foundation Scholarships Recipients

The Environmental Engineering and Science Foundation (EESF) has as its Mission "to secure and direct resources to advance environmental engineering and science in the areas of research, education and practice".

In line with its mission, EESF has created annual scholarships for Environmental Engineering and Environmental Science students at the Master's level.

In 2023, eight \$2,500 scholarships are being awarded to outstanding students seeking their Master's Degree in Environmental Engineering and Master's Degree in Environmental Science at accredited U.S. universities.

It is our privilege to introduce these outstanding recipients and provide excerpts from their resumes and essays.



MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Madeline Deck Virginia Tech

My goals are to reduce the number of illnesses and deaths caused by waterborne illnesses in the United States by studying mitigation strategies for pathogen proliferation and promoting outreach of the most practical strategies. This will enable the public to protect their own health.





MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Hannah Leibman University of Cincinnati

Whether out in the field or in a laboratory, my goal is to address the challenge of providing clean water by developing bio-remediation technology. My background in biology research, interest in nature, and passion for environmental sustainability have led me to work towards this goal.





MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Jesseri Enya Jensen (Bleazard) University of Colorado Denver

Understanding how to build sustainable urban watersheds capable of overcoming flooding is my ultimate goal. My professional goals lead to my ultimate goal by shaping my knowledge and providing me with the resources to become the best engineer I can be.





MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Peyton Allisha Woodruff North Carolina State University

Continuing my education would help me be a part of the solution to issues that I've witnessed in my personal and professional life, while aiding in the health and safety of our communities who feel that they are overlooked and forgotten.





MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Claire Elizabeth Funk Clemson University

As a professional wastewater consultant, I plan to suggest new technologies that will make the process more energy efficient and lead to cleaner wastewater which will further protect public health. As I explore wastewater treatment in academia and consulting, the greatest goal I have for my career is to make an impact while protecting the environment and public health.





MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

McKenzie Celine Pearson University of Minnesota

I have had the opportunity to get involved with organizations and initiatives that support communities that are not afforded the privilege of environmentally safe living conditions. As I enter my professional career, I want to apply my technical and leadership skills to create solutions for communities disproportionately affected by environmental harm.





MASTER'S DEGREE IN ENVIRONMENTAL ENGINEERING

Natalia Taiz Salazar University of California, Davis

I hope to receive my doctorate degree in environmental engineering, particularly in research related to climate change and its impact on low-income and minority communities as my goal is to give back to my community and influence engineers to fight for the communities they interact with.





2023 Environmental Engineering and Science Foundation Scholarships Recipients

MASTER'S DEGREE IN ENVIRONMENTAL SCIENCE

Maxwell Donald Pepperdine University of California, Santa Barbara

Throughout my future professional goals, I look forward to working on a range of environmental issues that benefit both the natural environment and public health. Not only is this crucial for people to understand and recognize, but it also provides a strong argument for the protection of our natural systems.





Welcome Back



Keynote Speaker Dr. Kimberly L. Jones, BCEEM



Dr. Kimberly L. Jones is Associate Provost for Faculty Affairs and Professor, Department of Civil and Environmental Engineering at Howard University. She holds a B.S in Civil Engineering from Howard University, a M.S. in Civil and Environmental Engineering from the University of Illinois and a Ph.D. in Environmental Engineering from The Johns Hopkins University. She is a Fellow of the Association of Environmental Science and Engineering Professors (AEESP), a board-certified environmental engineer member, and a member of the International Women's Forum. Her research interests include water and wastewater quality, environmental policy, membrane separations, global water treatment, environmental justice, risk evaluation and environmental nanotechnology.

In 2023, Dr. Jones was appointed chair of the Chartered Science Advisory Board (SAB) of the US EPA. She previously chaired the Drinking Water Committee and was liaison to the National Drinking Water Advisory Council of the SAB. Dr. Jones has served on the Water Science and Technology Board of the National Academy of Sciences, and the Board of AEESP, where she was Secretary of the Board. She has served on several committees of the NASEM, including the *Committee on Environmental Engineering for the 21st Century: Addressing Grand Challenges*.

Dr. Jones has received the Researcher of the Year award from Howard University, a Top Women in Science Award from the National Technical Association, the Outstanding Young Civil Engineer award from University of Illinois Department of Civil and Environmental Engineering, a NSF CAREER Award, an Outstanding Leadership and Service and Outstanding Faculty Mentor award from Howard University, and Top Women Achievers award from Essence Magazine.















Leadership and Excellence in Environmental Engineering and Science

Intersection of Water Research and Policy: Ensuring Public Health in the 21st Century

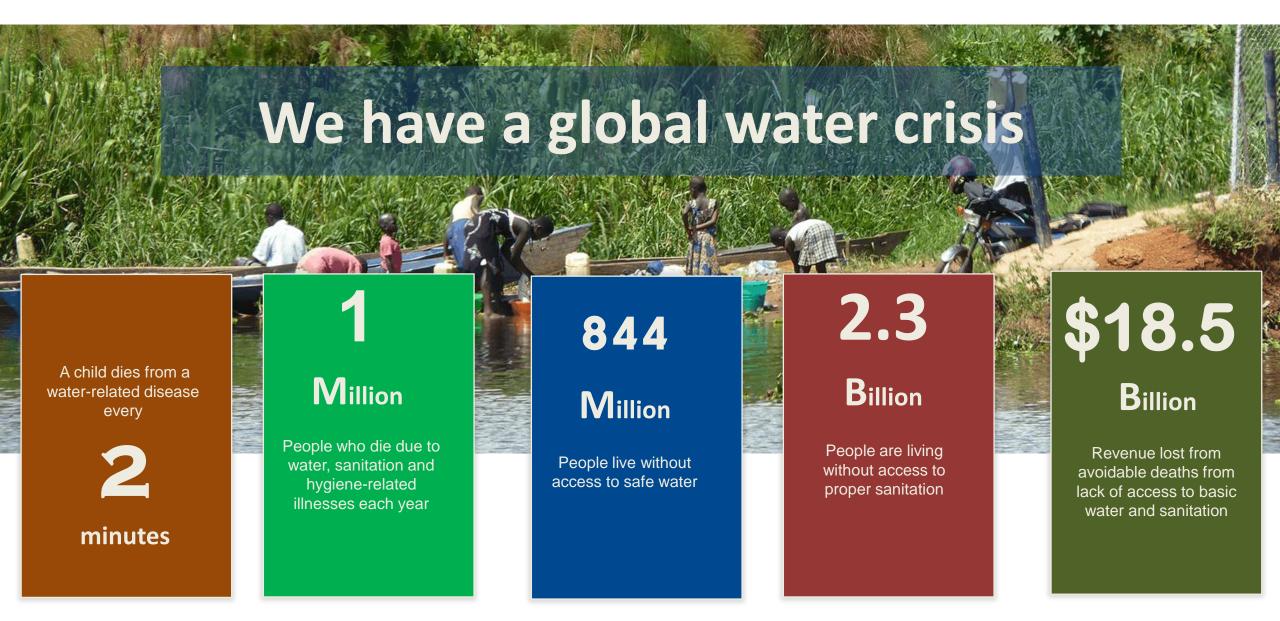


American Academy of Environmental Engineers and Scientists (AAEES)

Awards Celebration
April 11, 2024@Howard University

Kimberly Jones, Ph.D., F. AEESP, BCEEM

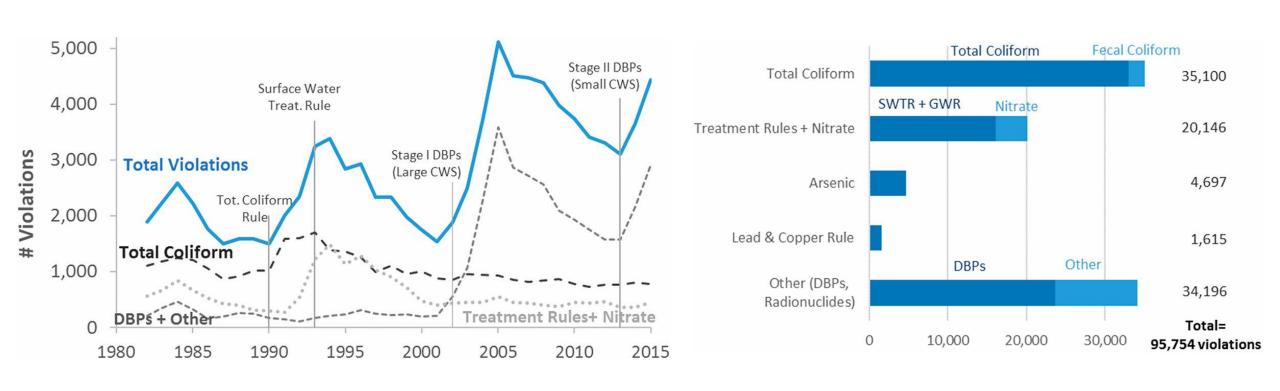
Associate Provost, Office of the Provost and Chief Academic Officer Professor and Chair, Civil and Environmental Engineering



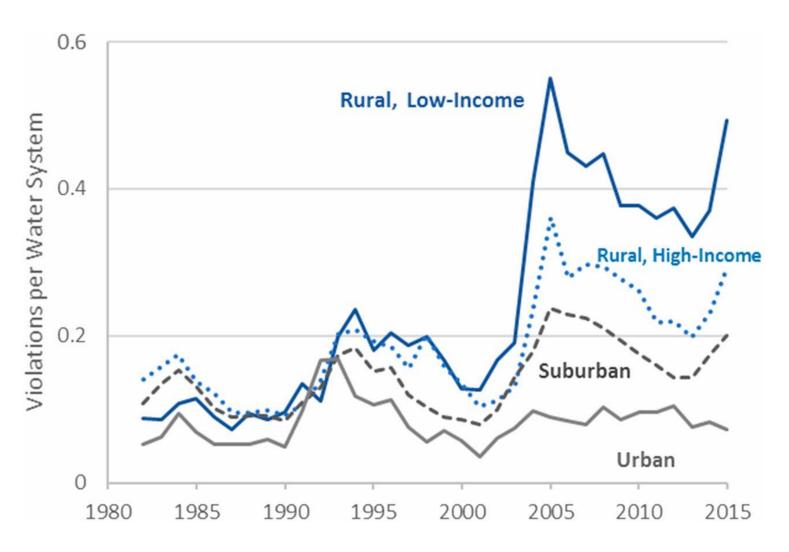




Water quality is regulated by EPA, but many water systems cannot comply...

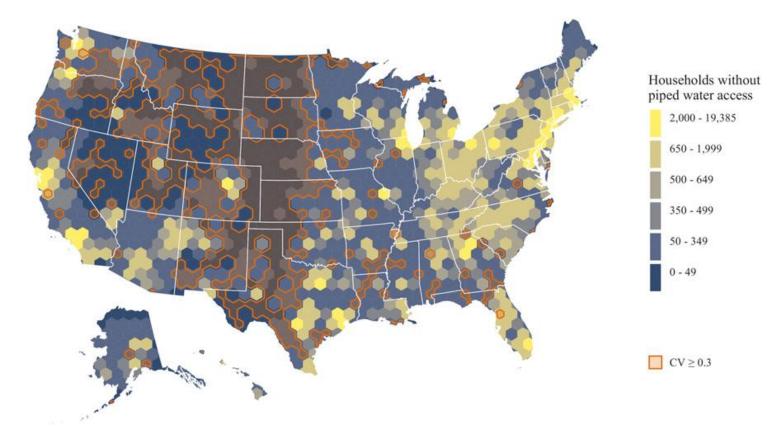


Water quality is regulated by EPA, but many water systems cannot comply...



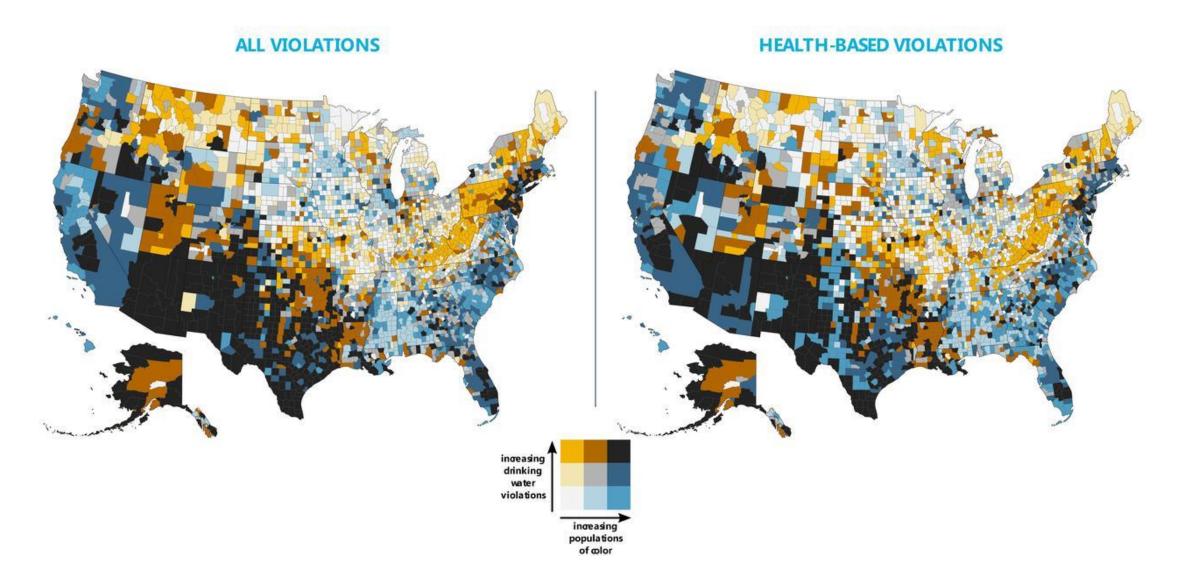
Maura Allaire et al. PNAS 2018;115:9:2078-2083

Water Insecurity: Households without piped water access in the United States, 2013 to 2017.



- Urban households headed by people of color are almost 35% more likely to lack piped water compared to white, non-Hispanic households.
- Lower-income households are more susceptible to a lack of piped water access—regardless of differences in housing characteristics, race, and regional wealth.

INTERSECTION OF DRINKING WATER VIOLATIONS AND RACIAL, ETHNIC, AND LANGUAGE VULNERABILITY BY COUNTY, JUNE 1, 2016 TO MAY 31, 2019.





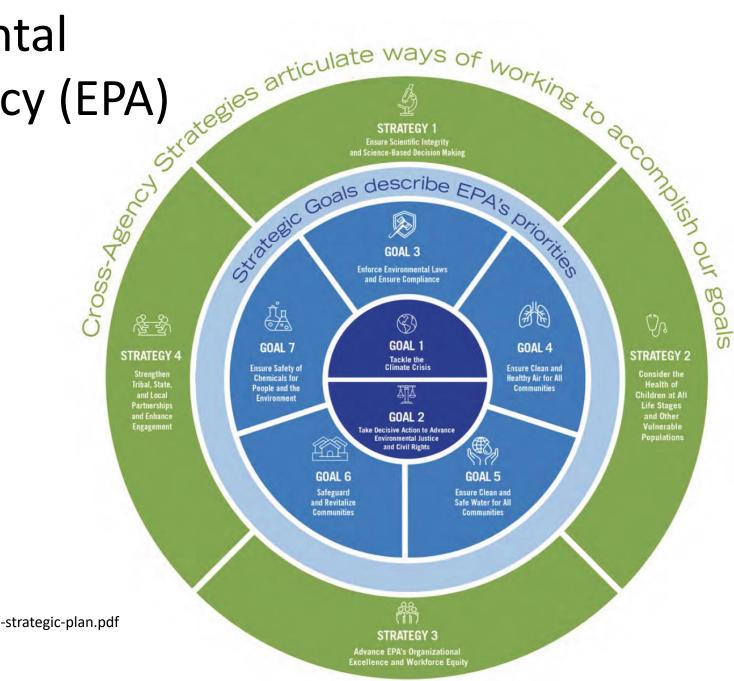
Environmental Protection Agency (EPA)

Mission: to protect human health and the environment

Principles:

- ✓ Follow the science
- ✓ Follow the law
- ✓ Be Transparent
- ✓ Advance Justice and Equity

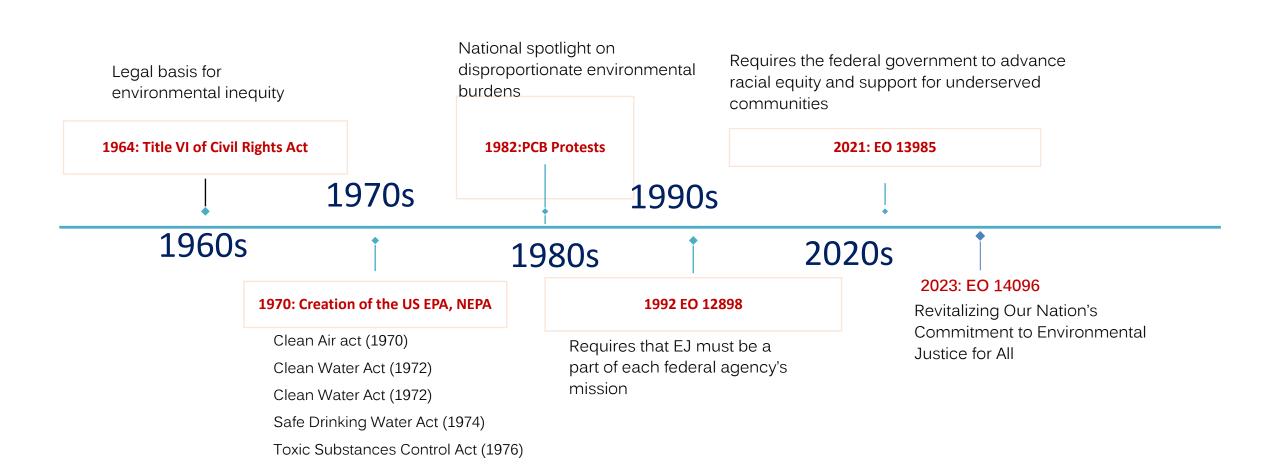
2022-2026 Strategic Plan



https://www.epa.gov/system/files/documents/2022-03/fy-2022-2026-epa-strategic-plan.pdf

Environmental Justice Timeline

MAJOR EJ ACTIONS



EPA Chartered Science Advisory Board (SAB)



Review the quality and relevance of the scientific and technical information being used by the EPA or proposed as the basis for Agency regulations



Review EPA research programs and plans



Provide science advice as requested by the EPA Administrator



Advise the Agency on broad scientific matters

EPA SAB Work on Environmental Justice

Review technical guidance for assessing environmental justice in regulatory analysis

Environmental Justice Science & Analysis Review Panel (EJSARP)

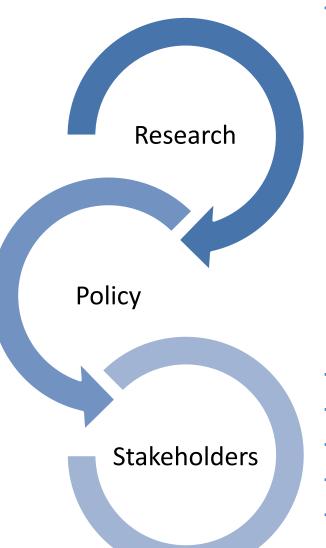
What can we do?

Federal and State Government Elected and Appointed Officials Economists

Lawyers

Social Scientists

Finance and Marketing



University and Laboratory Researchers

Environmental Engineers

Geologists

Chemical Engineers

Ecologists

Toxicologists

Chemists

Biologists

Epidemiologists

Water Utilities

Business Owners

Community Members

Clients

Advocacy Groups

Grassroots Organizations

University-Industry Partnerships

- Focus on applied research
- Cost and implementation considerations
- Integrate research with WWTP modeling and future planning
- Faster adoption of innovative technologies
- Students have clear view of future application of technology



Rahil Fofana, PhD







Urban Waters

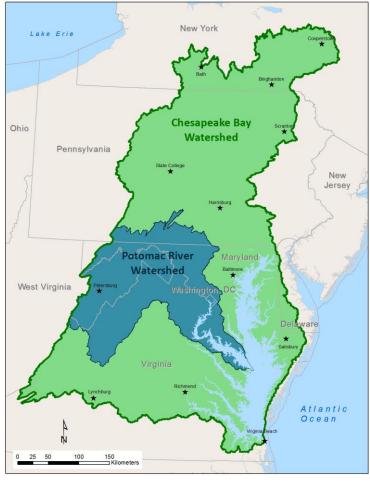
https://www.epa.gov/urbanwaters





Collaborative Water Management: Interstate Commission on the Potomac River Basin







Let's work together!





2024 Environmental Communications Award



2024 Environmental Communications Award

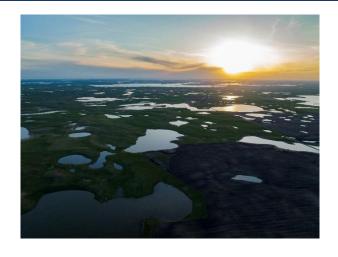


Grand Prize

Project: The Prairie Potholes Project

Entrant: University of Delaware and The Mainspring Agency

Person in Charge: Ben Hemmings, Director; Jon Cox, Executive Producer



The prairie pothole wetlands are vital habitats stretching from Canada through the upper Midwestern United States. Climate change threatens these unique features, impacting their chemistry and microbiological activity. Our team studies carbon and methane fluxes in these wetlands, considering how they may change under different climate scenarios. We've produced a short film highlighting our research and the region's ecology, history, and beauty to raise awareness of the prairie potholes.















2024 AAEES Individual Awards



2024 Honorary Member Bernard Amadei, Ph.D., NAE



Dr. Amadei is a Distinguished Professor and Professor of Civil Engineering at the University of Colorado at Boulder. He received his Ph.D. in 1982 from the University of California at Berkeley. Dr. Amadei is the Founding Director of the Mortenson Center in Engineering for Developing Communities (now Global Engineering). He is also the Founding President of Engineers Without Borders - USA and the Engineers Without Borders-International network co-founder. Among other distinctions, Dr. Amadei is an elected member of the US National Academy of Engineering and the National Academy of Construction. He is also an elected Senior Ashoka Fellow and was recently inducted into the 2023 ASEE Hall of Fame.

Dr. Amadei holds seven honorary doctoral degrees (UMass Lowell, Carroll College, Clarkson, Drexel, Worcester Polytechnic Institute, the Technion in Israel, and SUNY-ESF). In 2013 and 2014, Dr. Amadei served as a Science Envoy to Pakistan and Nepal for the US Department of State.













2024 International Honorary Member Pascal Saikaly, Ph.D.



Dr. Pascal Saikaly is a Professor of Environmental Science and Engineering at King Abdullah University of Science and Technology (KAUST), Saudi Arabia. He received his B.Sc. in Biology and M.Sc. in Environmental Technology from the American University of Beirut, Lebanon. He received his Ph.D. in Environmental Engineering from the University of Cincinnati in 2005 and continued his training as a postdoctoral fellow (2005-2007) in the Department of Civil and Environmental Engineering at North Carolina State University, USA.

He has 20+ years of experience in developing sustainable biotechnologies for wastewater reclamation and resource recovery, including bioelectrochemical technologies, aerobic granular sludge technology, microbial chain elongation

technology, and anammox process for wastewater treatment.

He translates novel wastewater treatment technologies from bench-scale to real-scale. His patented decentralized wastewater recycling technology has been demonstrated in Saudi Arabia to address the water scarcity issue. He currently leads the Environmental Biotechnology group at KAUST. The principal goal of the group is to optimize and develop sustainable environmental biotechnologies that enable us to fully harness the metabolic potential of microbial communities for resource recovery (e.g., reclaimed water, energy, chemicals) from waste streams.













Leadership and Excellence in Environmental Engineering and Science

2024 International Honorary Member Pascal Saikaly, Ph.D.





2024 Excellence in Environmental Engineering and Science Education (E4S) Award Recipient Sponsored by ABET



2024 Recipient: Professor Benito Marinas at the University of Illinois

Dr. Mariñas is Ivan Racheff Endowed Professor of Environmental Engineering, Department of Civil and Environmental Engineering (CEE), University of Illinois at Urbana-Champaign (UIUC) where he served as Department Head from 2014-2020. He also served as Director of the NSF Science and Technology Center of Advanced Materials for the Purification of Water with Systems - WaterCAMPWS (2012-14).

Dr. Mariñas teaches graduate and undergraduate courses covering fundamental, laboratory experimentation, and design aspects of environmental engineering and science. His research explores mechanistic aspects of disinfection processes, and nitrogenous disinfection by-product formation, and the development of novel membrane materials for the control of water-borne pathogens and chemical contaminants.







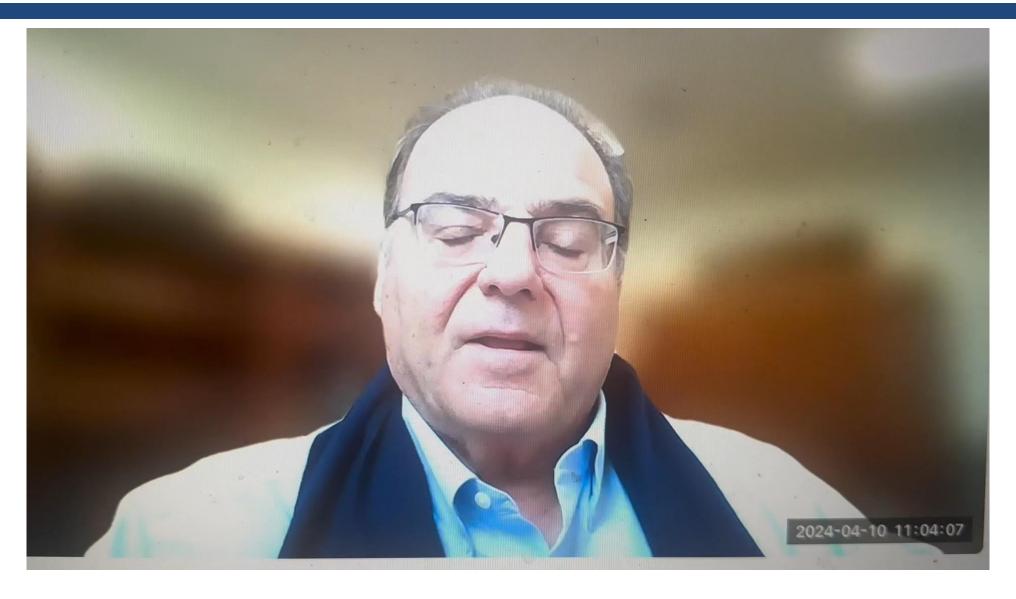






2024 Excellence in Environmental Engineering and Science Education (E4S) Award Recipient Professor Benito Marinas at the University of Illinois





2024 W. Wesley Eckenfelder Graduate Research Award Recipient



2024 Recipient: Zixuan (Zach) Wang, University of Illinois Urbana-Champaign

Zixuan (Zach) Wang is a postdoctoral researcher in the Department of Civil and Environmental Engineering at the University of Illinois Urbana—Champaign. He recently completed his PhD at Washington University in St. Louis, specializing in electrochemical phosphorus recovery from anaerobically digested sludge in the Department of Energy, Environment & Chemical Engineering. Zixuan's research interest is focused on emerging wastewater treatment and resource recovery technologies and quantitative tools that bridge the gap between academic and applied research.

During his doctoral studies, Zixuan published nine first-author papers and was honored with student poster and design competition awards at the Virginia, Missouri, and Illinois AWWA/WEA joint conferences. Zixuan holds a MS in Civil Engineering from Virginia Tech and a B.Eng. in Environmental Engineering from Xi'an Jiaotong University.

Originally from Ji'an Jiangxi (southern China), Zixuan enjoys travel, podcasts, fitness, and reading.













Ralph and Joe Bales Graber Science Award

(previously known as the AAEES Science Award)



The AAEES Science Award is now named The Ralph and Joe Bales Graber Science Award. This award honors two individuals who contributed to the formation of what is now known as the environmental engineering and science profession.

The Ralph and Joe Bales Graber Science Award is given to an individual who is an outstanding performer in the management and implementation of environmental science programs and projects conducted under either public or private auspices and has demonstrated exemplary professional conduct, has distinguished qualities of personal leadership, originality in devising new management techniques for dealing with environmental issues, and sensitivity and responsiveness to the impact of social and political influences on the conduct of environmental programs.













2024 Ralph and Joe Bales Graber Science Award Recipient (previously known as the AAEES Science Award)

AMERICAN
CADEMY
OF ENVIRONMENTAL ENGINEERS & SCIENTISTS®

Professor Dionysios D. Dionysiou, Ph.D., BCEEM June 1, 1966 - November 20, 2023

Environmental Engineering Professor Dionysios Dionysiou passed away unexpectedly on November 20, 2023. Dr. Dionysiou was an exemplary scholar and leader in the global field of water science.

Professor Dionysiou taught courses on drinking water quality, treatment and reuse, advanced unit operations for water treatment, advanced oxidation technologies, and physical-chemical processes for water quality control.

Dr. Dionysiou's life and work impacted innumerable people and their research nationally and internationally. Moreover, Dion was more than just an exceptional academic. To so many of us, he represented a friend, trusted colleague, and encouraging mentor. His drive, innovation, and compassion will be sorely missed by many.















2024 Brewster Snow Award Recipient



Kelly Hollman

Ms. Kelly Hollman has over 3 years of professional and academic experience working in various aspects of Civil/Environmental Engineering, including stormwater green infrastructure (GI) planning and design, geospatial analysis (GIS), and water quality data analysis. Her graduate research experience at San Diego State University as a master's thesis student focused on microplastics, specifically tire wear particles and microfibers, and their impact on water quality.

During her college career, she supported graduate student research and her experiences solidified her interest in water quality and protecting important water resources.

Currently, she works in consulting and has provided support for stormwater projects that require GIS, stormwater modeling, data analysis tasks, technical writing, and fieldwork support. Her projects focus on green infrastructure and industrial stormwater. She enjoys supporting clients on challenging projects and collaborating with fellow engineers to solve problems. Her professional experience also includes wastewater process engineering and master planning.















2024 Paul F. Boulos Excellence in Computational Hydraulics/Hydrology Award Recipient



Md Fahim Salek, Auburn University

Mr. Salek graduated from Bangladesh University of Engineering and Technology, Bangladesh, with a B.Sc. in Civil Engineering. He started his M.Sc. in Civil Engineering with a concentration in Water Resources and Environmental Engineering in 2017 at Florida Atlantic University, FL, where he worked as a research assistant for two years. His research involved studying the effectiveness of electrochemical oxidation in treating landfill leachate. Later, he decided to pursue a Civil Engineering Ph.D. at Auburn University, focusing research on geochemical interactions, and obtained degree in summer 2023.

During this time, he worked on understanding mineral reaction kinetics to enhance predictive capabilities for subsurface geological modeling in addressing climate and energy challenges.

He is currently employed at Auburn University as a postdoctoral fellow. His ongoing research concerns characterizing regional caprock formations and understanding mineral reaction kinetics in caprock fractures related to CO2 sequestration.













2024 Paul F. Boulos Excellence in Computational Hydraulics/Hydrology Award Recipient





2024 Gordon Maskew Fair Award Recipient Charles J. Newell, Ph.D., P.E., BCEE



Dr. Charles Newell holds the position of Vice President at GSI Environmental Inc. and is based in Houston, Texas. He is recognized as a Board Certified Environmental Engineer (BCEE), a Certified Ground Water Professional by the National Ground Water Association (NGWA) and serves as an Adjunct Professor in the Department of Civil and Environmental Engineering at Rice University. His academic and professional contributions are extensive, including co-authorship of four U.S. EPA publications, 12 environmental software systems, over 70 journal articles, five patents, and two books, notably "Natural Attenuation of Fuels and Chlorinated Solvents".

Dr. Newell's areas of expertise encompass site characterization, groundwater modeling, risk assessment, natural attenuation, LNAPL/DNAPL, remediation technologies, long-term monitoring strategies, technology transfer, and management of PFAS-impacted sites. He has served as a Principal or Co-Principal Investigator in numerous environmental R&D projects sponsored by various agencies and organizations, including the U.S. Department of Energy, American Petroleum Institute, U.S. Environmental Protection Agency, U.S. Department of Defense, and diverse industrial clients.















2024 Edward J. Cleary Award Recipient Robert C. Williams, P.E., BCEE



Rear Admiral Bob Williams, USPHS (ret.), has more than 45 years of experience in environmental engineering and public health. During his career, he served in the Office of the U.S. Surgeon General, the Agency for Toxic Substances and Disease Registry, the Centers for Disease Control and Prevention, and the U.S. Army Medical Service Corps. In these assignments, he addressed environmental issues across the Southeastern United States, Panama, and Puerto Rico. He developed national public health assessment and public health advisory programs addressing over 2000 National Priorities List Sites and RCRA sites. As Chief Engineer, he co-led efforts addressing the environmental public health impacts of the World Trade Center attacks of 9/11.

He is the recipient of numerous awards including the Stanley E. Kappe Award, PHS Distinguished Service Medals and Surgeon General's Medallions, the ASCE President's Award and Federal Engineer of the Year Award, and the AMSUS Gorgas Medal and Lifetime Achievement Award.

RADM Williams is actively involved in the Academy. He is the Chair of the AAEES Certification Board and Chair of the Bylaws Policies and Procedures Committee. He serves on the AAEES Eminence Committee and on the Board of the Environmental Engineering and Science Foundation.

He currently is a private consultant on public health and environmental engineering matters.













2024 Edward J. Cleary Award Recipient Robert C. Williams, P.E., BCEE





2024 Stanley E. Kappe Award Recipient Dr. Christian Davies-Venn, Ph.D., P.E., BCEE, BC.WRE, F.ASCE



Dr. Christian Davies-Venn, Ph.D., P.E., BCEE, BC.WRE, F.ASCE served as President of the Academy in 2014 and prior to that as Treasurer, Finance Chair, and Vice President. He is a Life Member and serves on the AAEE Certification Board and on various committees. For the past 20 years has served as the Academy's representative to the Council of Engineering and Scientific Specialty Boards.

He is a board-certified environmental engineer and water resources engineer with 47 years of experience in the planning, design, and delivery of civil and environmental engineering projects for federal, state, and industrial clients throughout the U.S. and overseas. He served as principal-in-charge, project director, and program manager and as Director of Water and Wastewater Engineering, Chief Engineer, and Vice President for an engineering consulting firm. His international experience includes design of development projects in Liberia, Sierra Leone, and the Gambia sponsored by the World Bank, the European Economic Community, and the African Development Bank.















Thank you for attending!

This event recording will be available on our website.





















