The Periodical of the American Academy of Environmental Engineers and Scientists®

Summer 2019 | Volume 55, Number 3

ENVIRONMENTAL ENGINEER & SCIENTIST

The 49th Annual AAEES Awards Luncheon & Conference

Dr. Joseph Cotruvo, BCES
2019 AAEES Science Award Recipient

5
2020 Election Results

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Summer 2019 | Volume 55, Number 3

FEATURES

DEPARTMENT

Quarterly Periodical of
The American Academy of Environmental Engineers and Scientists®

Address all communications on editorial, business and other matters to:

Editor-in-Chief,
Environmental Engineer and Scientist®
American Academy of Environmental Engineers and Scientists®
147 Old Solomons Island Road, Suite 303
Annapolis, Maryland 21401
410-266-3311

Postmaster: Please send address changes to AAEES, 147 Old Solomons Island Road, Suite 303, Annapolis, MD 21401.

Environmental Engineer and Scientist (ISSN 2325-842X) is published quarterly by the American Academy of Environmental Engineers and Scientists.

Subscriptions: Member dues are applied, in part, as a subscription to *Environmental Engineer and Scientist*. By way of membership, all members (BCEEs, BCEEMs, BCESs, AAEES Members, and Student Members) are automatically provided digital issues of *Environmental Engineer and Scientist* and must opt in to receive a hard copy (except for Student Members). Additional subscriptions, sold only to those not eligible for AAEES Membership are $20 ($50 outside North America); single copies are $10 ($20 outside North America).

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2019 AAEES ANNUAL BOARD OF TRUSTEES MEETING

The 2019 Annual Meeting of the Board of Trustees will be held at the Residence Inn Arlington Capital View in Arlington, Virginia, October 17-18, 2019.

The President's Reception and Installation Banquet will be held the evening of Thursday, October 17. The BOT meeting begins at 8:00 a.m. Friday, October 18. More details to follow next month.

2020 COMMITTEE APPOINTMENTS

Reminder to Committee Chairs - President-Elect James Patterson is anxious to receive your recommendations for new committee members and/or chairs to replace those whose terms expire in December 2019. The Academy is seeking volunteers who are interested in helping the Academy through its network of committees. Committee appointments are for three-year terms. Please email your recommendations and letters of interest to "the attention of President-Elect James Patterson" either via email, at JSOlmo@aaees.org or via postal mail to:

AAEES
147 Old Solomons Island Road, Suite 303
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WINNERS ANNOUNCED IN THE EESF/AEESP STUDENT SOCIAL MEDIA COMPETITION

The Environmental Engineering and Science Foundation and Association of Environmental Engineering and Science Professors are pleased to announce the winners of the 2019 EESF/AEESP Student Social Media Competition.

The winning teams are:

- First Place: University of South Florida
- Second Place: California Polytechnic State University, Pomona
- Third Place: University of California, Irvine
- Honorable Mention: Central State University

To learn more about the winning teams and their entries, go to http://www.eesfoundation.org/. AEESP and EESF will distribute the prize awards to the winning teams at the AEESP/AAEES WEFTEC Scientists' Luncheon on Monday, September 23, 2019, in Chicago, Illinois. All teams have been invited to attend.

HAVE YOU VISITED THE AAEES CENTER?

You may renew and update your profile records online! Even if you do not wish to renew online, you may still log in to update your contact information. Additional members-only benefits include an online directory, search for other members, view updated committee and board rosters, and purchase lapel pins, certificates, and other apparel.

Non-members and guests are also able to use the AAEES Center to apply for membership, subscribe to Environmental Engineer and Scientist, register for events, and to purchase AAEES publications. Click on the Log in button on the AAEES.org home page to visit the AAEES Center or go to: https://netforum.avectra.com/eWeb/StartPage.aspx?Site=AAEES.

The AAEES Center is a secure site. The information that we collect is never shared with third parties outside of our organization.

THANK YOU FOR ALL OF YOUR AAEES AWARDS NOMINATIONS

The Academy is grateful for all of the wonderful nominations that have been submitted for the 2020 AAEES Awards. We are carefully combing through all of the submissions for the following categories:

- **Gordon Maskew Fair Award** for substantial contributions to the environmental engineering and science profession
- **Edward J. Cleary Award** for outstanding management of environmental protection enterprises
- **Stanley E. Kappe Award** for outstanding service to the Academy and advancement of public awareness
- **Honorary Member** for professional eminence and achievements
- **International Honorary Member** for professional eminence and achievements
- **Science Award** for a professional in the environmental engineering and science fields

The individuals selected for this honor will be presented with their awards at the 2020 AAEES Awards Luncheon on April 23, 2020.

SHINING THE SPOTLIGHT ON YOU

The Academy has special features on its website and in electronic and print publications in recognition of you, **the Academy's honored professionals**. Send your submissions to YMoulden@aaees.org for:

Volunteer of the Month

Part of the Academy's success lies with the selfless work of its members. Do you know of a member that always goes above and beyond? Then send a 350-word nomination for **Volunteer of the Month**.

Side Tracks

Interested in knowing about the extracurricular activities of your fellow Academy members? Or do you have fun (or possibly funny) stories you'd like to share? *Side Tracks* is intended to

2020 Election Results

The 2020 Election Teller's Committee verified the results on June 18, 2019, for tabulation of the votes for the 2020 Election. This year, AAEES conducted the elections electronically using a secured online service.

Unofficial winners in the election of 2020 Officers and Trustees include:

- **Lilia A. Abron** - President-Elect
- **Daniel B. Oerther** - Vice President
- **Jeffrey H. Greenfield** - Trustee-at-Large
- **Mary deFlaun** - Trustee-at-Large

Confirmation of their election will take place at the 2019 Annual Meeting. They will be installed October 17, 2019, along with the new Board of Trustees. Their official terms start January 1, 2020.

President-Elect **James W. Patterson** will also assume the role of President beginning January 1.

Leaving the Board December 31 are:

- **C. Hunter Nolen**, Past President,
- **Roland Benson Pair**, representing AIChE and
- **Wendy A. Wert**, Trustee-at-Large.

AAEES thanks the 2020 Election Teller's Committee for taking the time to tabulate the votes:

- **Mark H. Houck**, Ph.D., P.E., BCEE
- **Gregory J. Welter**, P.E., BCEE
- **M. Susan Merther**, BCES


Lilia A. Abron


Daniel B. Oerther


James W. Patterson


Jeffrey H. Greenfield


Mary deFlaun

provide a vehicle for learning about the outside interests of your colleagues.

UPCOMING AAEES ACTIVITIES

September 23, 2019 - AAEES/AEESP Scientists' Luncheon at WEFTEC

The Water Environment Federation, the Association of Enviromental Engineering and Science Professors, and AAEES will be holding the 2019 Scientists' Luncheon at WEFTEC. Dr. David Dzombak, P.E., BCEE, is the speaker. His topic is **Interbasin Transfers and Water Risk in the United States**. This event will take place from 12:00 - 1:30 pm. Earn one Academy PDH for attending. Register at https://www.weftec.org/attend/register/about-registration/.

October 10, 2019 - 2019 CNY Environmental Symposium

Howard B. LaFever, P.E., BCEE has organized a one-day environmental symposium in Cazenovia, NY. Leading professionals from Center New York have been invited to speak on the topic, **Challenges Now and in the Future**. Attendees can earn up to five PDH credits. Registration is $100 for AAEES Members, $125 for Non-Members, and $25 for Students. For details and to register, go to http://bit.ly/2019CNYSymposium.

October 18, 2018 - AAEES Annual West Coast Event

The 2019 AAEES Annual West Coast Event will take place at the SCCWRP Headquarters in Costa Mesa, California. This year's topic is **Climate Change: Water and Wastewater Agency Adaptation Resiliency**. This dinner and networking seminar was organized by Sharon Yin, Lori McKinley, and Wendy Wert. Registration is $60, $30 for Students. For additional information and registration details, go to http://bit.ly/2019WestCoastEvent.

Burk Kalweit

BIG Environmental Problems Call for BIG Solutions — A story in three parts.

The Ocean Cleanup, located in Rotterdam, Netherlands, is designing and developing what it identifies as the first feasible method to rid the world's oceans of plastic. Every year, millions of tons of plastic enter the ocean. Microplastics are miniscule fragments that break from larger plastic items (such as bottles or bags) as they degrade in the environment. They range in size from a grain of rice all the way down to a virus, and have been found in the oceans, lakes, soil and even blowing in the air. A number of studies have documented one-off observations of microplastic pollution in isolated samples of deep ocean waters or seafloor sediment. But until quite recently, no one has performed a controlled, surface-to-seafloor census of such particles.

A significant percentage of this plastic drifts into large systems of circulating ocean currents, also known as gyres. Once trapped in a gyre, in this case the area known as the Great Pacific Garbage Patch, the plastic will break down into microplastics and become increasingly likely to be mistaken for food by sea life. The Ocean Cleanup is developing and refining a passive system that moves with the currents – just like the plastic – to catch it. The system consists of a 600-meter-long floater that sits at the surface of the water and a tapered 3-meter-deep skirt attached below. The floater provides buoyancy to the system and prevents plastic from flowing over it, while the skirt stops debris from escaping underneath.

> *"We created the mess, now it's up to us to figure out how to clean it up and keep it from happening again.*

After a sizeable stint on the sidelines, The Ocean Cleanup Project is bouncing back into action. *Credit: © The Ocean Cleanup Project*

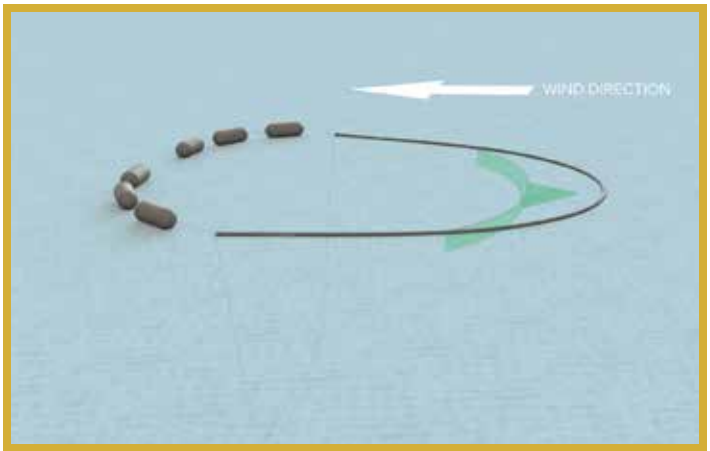
As the system moves through the water, the plastic continues to collect within the boundaries of the U-shaped system. The Ocean Cleanup targets plastics that are larger than microplastics in its cleanup efforts on the theory that removing larger pieces prevents these degrading into the next generation of harder-to-collect and treat plastic detritus that is gradually eroding to microparticle status.

By deploying a fleet of 60 systems, The Ocean Cleanup estimates that it will be able to remove up to half of the Great Pacific Garbage Patch in just 5 years' time. The concentrated plastic will be brought back to shore for recycling and sold to enterprises that will use the plastic as a raw material. The revenue gained will help fund the cleanup expansion to the other four ocean gyres.

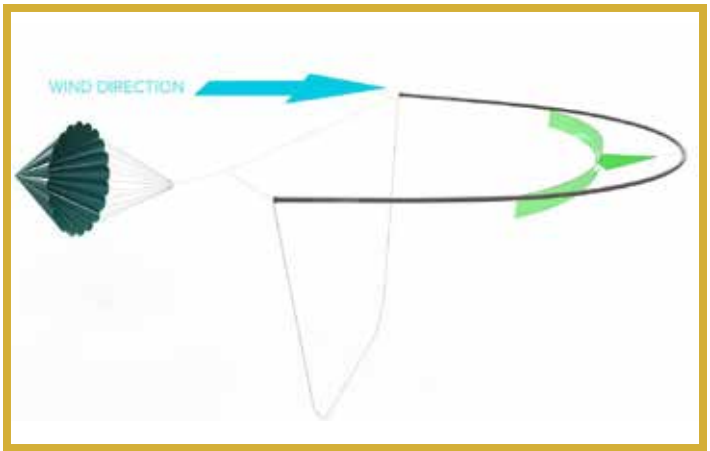
In preparation for full-scale deployment, The Ocean Cleanup organized several expeditions to map the plastic pollution problem in the Great Pacific Garbage Patch to an unprecedented degree of detail. The team simultaneously advanced its design through a series of scale model tests, including prototypes deployed in the North Sea in 2016, 2017 and 2018. The first beta cleanup system was deployed from San Francisco Bay in September 2018, being towed to the Great Pacific Garbage Patch to commence cleanup operations in October.

Powered by a combination of the ocean currents, surface waves, and wind, the system was intended to travel faster than the plastic it was built to collect. The plastic is propelled by just the current, allowing it to accumulate within the barrier to be hauled to shore by support vessels.

At least that was the theory. The team found that after just a few months the barrier had experienced metal fatigue which led to fracturing at the system connecting points. Perhaps more problematic, the system was struggling to maintain the speed differentials required to corral and collect the plastic pieces and



The Ocean Cleanup team will attach a string of huge inflatable buoys across the system's opening, which are hoped to add to the windage of the system and pull it through the water faster.
Credit: © The Ocean Cleanup Project



The Ocean Cleanup team is looking at attaching a large parachute to its trash-collection system as a way of slowing it down
Credit: © The Ocean Cleanup Project

particles. Seeing the need to make some adjustments, the team returned to shore in January 2019 to create system 001/B.

The team describes these as "unscheduled learning opportunities." One of the key lessons learned is that it doesn't actually matter if the system travels faster or slower than the plastic. As long as it does one or the other on a consistent basis, as it sweeps through the patch, the plastic should build up.

The upgraded version is now on its way back to the Great Pacific Garbage Patch, with the team preparing to test several new features. One new feature is the attachment of a string of inflatable buoys across the system's opening. This is intended to add more wind power to the system to generate more speed and improve the efficiency of collecting the plastic.

If that fails, the team will turn to Plan B: attaching an 'aquatic parachute' to the opening. This is intended to serve as a speed regulator, slowing the system down so that it travels at around the same speed as the water. Earlier observations show the plastic can travel much faster than the water current itself, so this should also allow the plastic to readily build up within the U-shaped barrier.

There have also been a few changes made to address the durability issues; building simpler connections between the barrier and floating skirt, and removing large stabilizing structures that have been deemed unnecessary. The barriers have been scaled to less than half of their initial size. The team has also taken a more modular approach to construction, enabling faster deployment and the ability to make certain alterations without towing it back to shore.

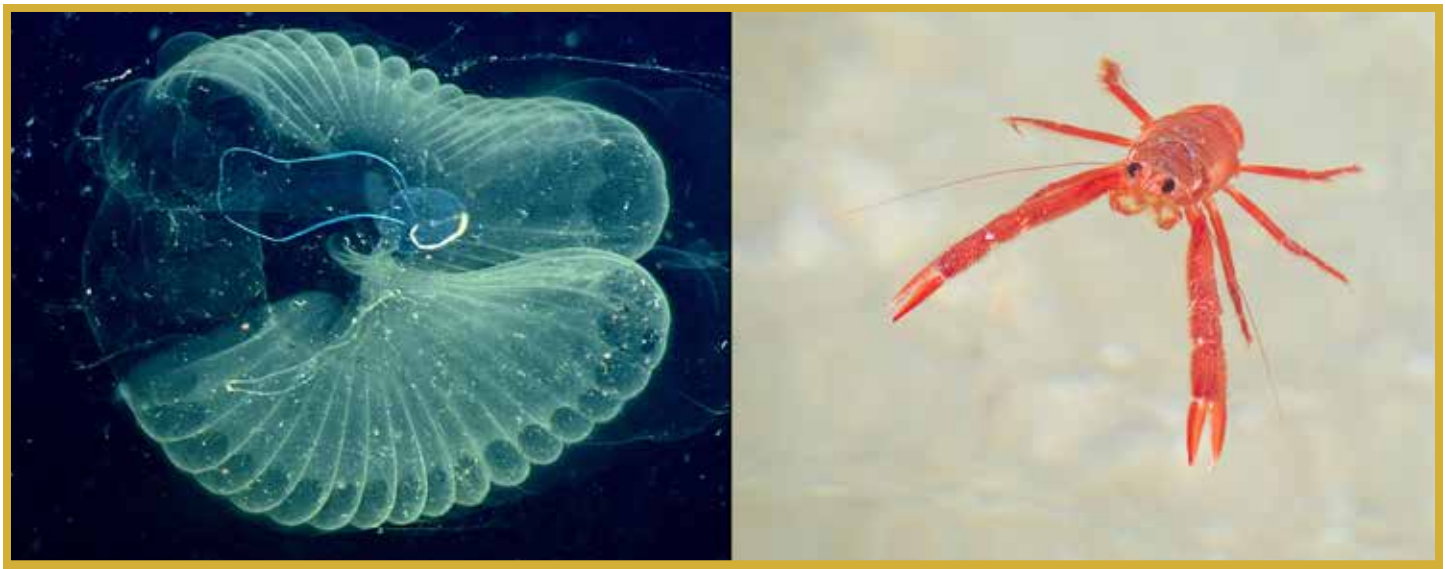
The Ocean Cleanup has previously stated its plans to deploy a fleet of 60 trash-catching systems in the Great Pacific Garbage Patch, an accumulation of plastic believed to cover 1.6 million sq km (617,000 sq mi), or an area around the size of Alaska. It is unclear how these unscheduled "learning opportunities" impact that timeline, but TOC imagines a fleet that size could remove half of that plastic within five years.

What we have in this proposed solution is an intriguing mix of innovation and old technology. The rationale employed in the development of this approach is simple: if you want to get rid of the dirt, all you need to do is sweep it up and take it somewhere else to dispose of it. What could be easier? Well, yes there is the issue of doing this in an aquatic setting using technology that is untried and highly experimental. And there is that secondary consideration; while The Ocean Cleanup is designed to work at the level of plastic pieces that are larger than microparticles, can it effectively stem creation microparticles from the items that it is not able to scoop and treat with its own system.

Minuscule pieces of plastic pollution were originally discovered floating on the sea surface decades ago. Now, in the first study to systematically comb a section of ocean from top to bottom for these microplastics, researchers have found that the deep water that is a key marine animal habitat harbors significantly greater plastic pollutant loads than surface water does. Shockingly, more microplastic occurs in the depths of California's Monterey Bay than on the surface in the notorious Great Pacific Garbage Patch.

The researchers used a remotely operated vehicle to collect samples in both a nearshore and offshore site in Monterey Bay. As the ROV descended from just 5 to over 1,000 meters below the surface, a specially designed sampler filtered thousands of liters of water across a mesh that retained particles greater than 0.01 millimeters in diameter (about the size of a human red blood cell). Back in the lab, the team used spectroscopy to identify the types of plastic present.

Contrary to expectations, the polymers they found indicated that most of the microplastic polluting their sampling sites originated not from fishing gear deployed throughout the bay, but from materials commonly found in single-use beverage and food containers. They also found more particles at the offshore sampling site—located more than 24 kilometers from



The researchers discovered microplastic particles inside the bodies of deep-sea larvaceans *(left)* and pelagic red crabs *(right)*.
Credit: © MBARI (left); © Monterey Bay Aquarium (right)

the coast—than they did at the nearshore one. This suggests that most of the pollutants the team recovered likely originated from places further afield. This is an indication that there is potentially substantially more plastic circulating in the ocean that was generally conjectured.

Although the researchers found microplastics wherever they looked, the particles were unevenly distributed in the water. The surface—where they intuitively expected to find the greatest amount of plastic because it is less dense than water—actually contained the lowest concentrations, about on par with the seafloor. The deep-sea zone located 180 to 460 meters below the surface, known as the midwater, contained the highest amount of microplastic waste—about four times as much as on the surface. The researchers think this may be because when plastic breaks down into smaller pieces and particles it becomes laden with biological material that causes it to sink in the water column. Ocean currents may also affect what depths microplastics concentrate at, and could be a reason there are fewer particles near the seafloor.

The conventional wisdom up to now has been that because plastic products are buoyant more of them would be seen at the ocean's surface. However, the work done by the research team indicates that the significant take away is the suggestion that the real Great Pacific Garbage Patch may be found 800 feet below the surface. All we have to work with at this time are findings based on a single specific location. What is clearly needed is more work that will extend such studies to other areas around the globe. We have a dire need to determine if these findings are representative of conditions found elsewhere or are unique to the Monterrey Bay area.

If the results hold for the wider ocean environment, the concentration of plastic in the midwater would be concerning because this zone is key habitat for the majority of marine animals. Researchers have found large amounts of microplastics in pelagic red crabs and giant larvaceans, two filter-feeding species that reside in the midwater and are fundamental to food webs at both the ocean's surface and the seafloor. These particles provide no nutritive value and can contain toxic chemicals. The research indicates that this is a significant problem. It is also an indication of how easily, albeit unintentionally, humanity can detrimentally transform natural systems.

However, the news is not all bad. If the majority of the waste originates from single-use plastic, this means we could largely eliminate the supply of microplastic pollution by choosing alternative products. This would enable us to drastically reduce the production and use of those items that create the micro plastic problem.

Big problems crying out for big solutions is what we have going on here. From the perspective of an environmental engineer or scientist, the story told here is all about the opportunity to develop and implement substantive and effective, long-lasting solutions. These are the sorts of challenges that encouraged you to choose an environmental career to begin with.

Research and discovery are what drives understanding and change. You can't build a solution until you understand the problem. You can't understand the problem without doing the requisite amount of research. We created the mess, now it's up to us to figure out how to clean it up and keep it from happening again. From an environmental professional's perspective, isn't that where the fun really begins?

Burk

LETTERS TO THE EDITOR

To the editor, Environmental Engineer & Scientist

On the President's Page in the Spring edition, Kristin Morico discussed disruption and chaos in the industry. She stated that "Protecting the people, assets, and reputation of the company you work for is paramount ..."

However, as a Professional Engineer there is a higher duty than that to ones' coworkers or employer. To quote Connecticut's rules for Professional Engineers, "The engineer … shall at all times recognize his or her primary obligation to protect the safety, health, and welfare of the public in the performance of his or her professional duties." California rules state that "Whenever protection of the public is inconsistent with other interests sought to be promoted, the protection of the public shall be paramount." These rules are similar in all states, and in most of the Codes of Ethics of the AAEES sponsoring organizations.

While Ms. Morico's statement is understandable since the purpose of compliance is to protect the public, a focus on one's own organization's people, and particularly its assets and reputation, may lead one to miss the overriding duty to the public. It is easy to imagine a situation where concern for the organization might lead to a desire to protect it from some consequence such as embarrassment, loss of market share, or a significant fine, obscuring the welfare of the public. I would suggest that our publications and discussions should reflect the paramount duty to the public, with professional integrity being paramount and above any duty to any other organization.

Bill Forbes, P.E., BCEE
Virginia Beach, Virginia

AWARDS AND HONORS

Prakasam Tata Awarded 2019 Ellis Island Medal of Honor

Professor Emeritus Prakasam Tata, Ph.D., BCES, of Neperville, Illinois, has been awarded the 2019 Ellis Island Medal of Honor.

After a 64-year commitment to water conservation and waste management that will continue into the future, Professor Emeritus Prakasam Tata (pronounced Thatha), a resident of Chicagoland, has been awarded the Ellis Island Medal of Honor that recognizes the contributions and good works of immigrants.

Tata, a vigorous 83 years old originally from Andhra Pradesh, can regale you with fascinating stories about how he developed his passion for water and waste management, traveled to the most "rural, rural" areas of West Bengal and Maharashtra, became a fluent Bengali speaker loved by locals who named him Prakash Chatterjee embracing him in their community.

He arrived in the United States in 1962, for a Ph.D. at Rutgers, and from there to Cornell, finally landing up in Chicago drawn by the water management practices adopted following the 1887 Lake Michigan pollution disaster that resulted in numerous deaths, he says.

He recalls he was just 19 when he began his Ph.D . at Nagpur University, only to be interrupted by an invitation to apply for a research assistant position at the All India Institute of Hygiene & Public Health in 1951 in what was then called Calcutta.

Professor Frederick Erickson, an American who interviewed Tata at that time, advised him to gain expertise in water and waste management rather than his planned Ph.D. at Nagpur, predicting that it would be the major challenge of the future not just for India but for the world. (The AIIHPH was founded in 1932, the first such institute in all of Southeast Asia).

"I didn't know anything about it, but I wanted to change the world," Prof. Tata told Desi Talk in a phone interview. "Lo and behold, I got the job!" he exclaims.

"And when I told my Nagpur mentor, Professor M.C. Nath, he encouraged me saying it was a fantastic opportunity pointing to how people are dying from diseases as a result of water pollution," Tata recalls.

During his 7 years of working in remote areas in India, Tata lived for long periods of time in a home without electricity or running water, sleeping on the floor, in a village near Singur, West Bengal.

After reaching the U.S. in 1962, and getting his Ph.D. from Rutgers, teaching at Cornell University, Tata got an invitation

> *"I didn't know anything about it, but I wanted to change the world."*

from the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) to work in its Research and Development Department and another invitation to teach at the Department of Environmental Engineering Illinois Institute of Technology the subjects of Water and Wastewater Treatment, Biochemical Engineering., etc. He coauthored four books and published more than 150 reports and papers related to Environmental Engineering and Science.

In 2002 he retired as the Head of the R & D division and Assistant Director of the R& D Department at MWRDGC, with the intention of doing humanitarian and philanthropic work.

During his telephone interview, Prof. Tata, president of a non-profit named Bharathi Theertha, though an Andhra-ite, breaks into fluent Bengali, speaking like a native at a fast pace, describing his years of dedication with colorful stories about his experiences.

Now on May 10th, accompanied by his wife of more than 60 years, he received his Medal of Honor in a ceremony on Ellis Island, New York, along with the likes of another Indian-American, Dr. Sanjay Gupta of CNN fame. In a letter from the chairman of Ellis Island Medals of Honor, Nasser J. Kazeminy, says, "… your achievements truly inspire and touch the lives of people worldwide…."

Every year since he retired 16 years ago, Prof. Tata, visits India in a volunteer capacity as an expert on water and waste management. He recently took a delegation of 25 experts from U.S. to India for the International Conference on Water & Waste Management. And since 1974, he has been making annual visits, for both family and work reasons.

He told Desi Talk part of his youthful 83, can be attributed to his daily morning exercise, and his commitment. Professor Tata is the executive director, Center for the Transformation of Waste Technology, in Naperville, Illinois. Among his many engagements, he has organized the World Water Day Celebration held March 23, at Naperville.

Story Courtesy of: By Ela Dutt, Editor, News India Times
https://www.newsindiatimes.com/passion-for-water-and-waste-management-fetches-ellis-island-medal-for-this-indian-american/

Dr. Tata has been a Board Certified Environmental Scientist in Sustainability Science since 2013.

2019 Frederick George Pohland Medal Recipient: Spyros G. Pavlostathis, Ph.D., BCEEM

Spyros G. Pavlostathis, Ph.D., BCEEM, has been awarded the 2019 Frederick George Pohland Medal.

Dr. Spyros G. Pavlostathis is Professor of Environmental Engineering at the School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA. A recipient of the Fulbright Scholarship, Dr. Pavlostathis completed his MS and Ph.D. in Environmental Engineering at Cornell University after obtaining his Diploma in Agricultural Engineering at the Agricultural University of Athens, Greece. He is a Board Certified Environmental Engineer Member of the American Academy of Environmental Engineers and Scientists (AAEES), and a Fellow of International Water Association (IWA), Water Environment Federation (WEF), and American Society of Civil Engineers (ASCE).

Dr. Pavlostathis is internationally recognized for his expertise in the areas of environmental biotechnology and bioprocess engineering for the bioremediation of contaminated natural systems and the treatment of municipal and industrial wastewater, as well as the kinetics, modeling, and simulation of bioprocesses. His research includes bioenergy and biofuels; bioavailability, fate and biotransformation of recalcitrant organic compounds; the biotransformation of emerging environmental contaminants; disinfectant-induced antibiotic resistance; as well as microbial fuel cell and bioelectrochemical technology.

Dr. Pavlostathis has published over 150 peer-reviewed papers and authored over 200 publications including books or book chapters. Dr. Pavlostathis has organized or chaired over 45 conferences and conference sessions and frequently serves as a consultant, invited speaker and panelist on behalf of city, county, state and federal agencies in the US and abroad. An active member of several professional organizations, Dr. Pavlostathis has served on the Editorial Boards of the *Journal of Environmental Engineering*, *Water Science & Technology* (Guest Editor), *Biotechnology Letters*, *Journal of Hazardous Materials*, *Water Environment Research*, and *Water Quality Research Journal*.

Dr. Pavlostathis is the recipient of numerous awards and fellowships including: Greek National Scholarship Foundation; French Government Scholarship; Fulbright Scholarship; Kassimati Foundation Scholarship; Dutch National Science Foundation Fellowship; Water Environment Federation/Georgia Water & Pollution Control Association Laboratory Analyst Excellence Award; Georgia Institute of Technology/School of Civil & Environmental Engineering Best Paper Award; Georgia Institute of Technology/School of Civil & Environmental Engineering Sustained Research Award for Excellence in Environmental Research and Archival Publications; Visiting Scholar Fellowship at the University of Ulster, Northern Ireland, UK; Marie Curie Visiting Senior Research Fellowship at the National University of Ireland, Galway, Ireland; the Association of Environmental Engineers and Scientists, Georgia Institute of Technology, Outstanding Faculty Award; Fair Distinguished Engineering Educator Medal, Water Environment Federation.

Throughout his academic career, Dr. Pavlostathis has been a dedicated educator of future environmental engineers, teaching at both the undergraduate and graduate level. Committed to the mission of teaching, he remains actively engaged in the development of curriculum and is involved in the advisement of both graduate and undergraduate engineering students. In recognition of his experience and high standing in the education of aspiring engineers he has been invited to give over 40 short courses and lectures both nationally and worldwide. He has served abroad as an evaluator of engineering curricula and programs, as well as an external thesis reviewer. Through his research activities, he has mentored 20 post-doctoral fellows and visiting scholars, 17 Ph.D. and 24 MS students, who have gone on to work in consulting, state and federal regulatory agencies, as well as academia, and provided many research opportunities for undergraduate students.

ON THE MOVE

Barton & Loguidice, D.P.C. (B&L) opened a new office in Annapolis, MD, in May 2019 and has appointed Laura C. Siemers-Kennedy and David J. Kerr to key positions. B&L is an engineering, planning, environmental, and landscape architecture firm with 270 employees working from offices in New York, Maryland, Pennsylvania, and New Jersey. Maryland office locations include Annapolis (116 Defense Highway) and Baltimore.

Laura C. Siemers-Kennedy, P.E., BCEE, has joined the Water/Wastewater group as Managing Engineer. Ms. Siemers-Kennedy is a Licensed Professional Engineer in Maryland and D.C. with 13 years of experience in hydraulic modeling, master planning, and design engineering. Her project experience spans the Mid-Atlantic region and the globe, having served clients in Maryland, D.C., Delaware, Virginia, New York and Australia. She has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 2014 and is a member of the American Water Works Association (AWWA)/Chesapeake Section.

David J. Kerr, P.E., BCEE, was hired as Senior Managing Engineer. Mr. Kerr joins the firm's Water/Wastewater Practice Area and has 21 years of experience in hydraulic modeling, master planning, asset management, design, construc-

Member News, *continued on page 16*

2018 Contributors and Sponsors

Contributions and sponsorships that the American Academy of Environmental Engineers and Scientists and the Environmental Engineering and Science Foundation receive are vitally important to the infrastructure and longevity of many programs. We are pleased to recognize the individuals on the following pages for contributing to various funds during 2018.

FUNDS FOR THE AMERICAN ACADEMY OF ENVIRONMENTAL ENGINEERS AND SCIENTISTS

While most contributions are donated during the specialty certification renewal process, members may log in to their account on the AAEES Center at any time to donate to any of the following funds:

- **AAEES General Fund.** This fund is for supporting AAEES infrastructure.
- **Environmental Engineering and Scientist Fund.** This fund supports improvements to editorial quality of the AAEES quarterly periodical, *Environmental Engineer and Scientist*.
- **Excellence in Environmental Engineering and Science (E3S) Fund.** This fund aids the publicity of the program.
- **Kappe Lecture Fund.** This fund is used to support and ensure continuance of the Kappe Lecture Series.

In addition to during the specialty certification renewal process, donations to these funds can be made year-round either by logging in to the AAEES Center, or by mailing a check to Academy headquarters. AAEES is a 501(c)6 organization. Your donation may be reported as a business expense. Consult your tax advisor for details.

AAEES GENERAL FUND

Ahern, Daniel B. ..... Beaufort, SC
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Arora, Madan L. ..... Pasadena, CA
Baldwin, Geoffrey G. ..... New York, NY
Brown, Jeanette A. ..... Darien, CT
Burrows, William Dickinson ..... Frederick, MD
Butler, William A. ..... Atlanta, GA
Buzby, Mary Elizabeth ..... Barnegat Light, NJ
Caballero, Ross Charles ..... Pacific Palisades, CA
Canzano, Pasquale S. ..... Dover, DE
Charrington, Peter R. ..... Wayne, PA
Cole, T. Gerald ..... Pleasant Hill, CA
Compton, Glenn A. ..... Phoenix, AZ
Corneille, Richard W. ..... Redlands, CA
Corson, John T. ..... Kingsford, MI
Cummings, Adam Daniel ..... North Chili, NY
Curtis, Lamont W. ..... Newport News, VA
Decker, Thomas E. ..... Aldie, VA
Dedovic-Hammond, Slavica ..... Playa Del Rey, CA
Dinkle, Ralph E. ..... E. Stroudsburg, PA
Dodzik, Andrew J. ..... Palm Coast, FL
Dominy, Matthew ..... Gilbert, AZ
Edwards, Allan B. ..... Northbrook, IL
Ewing, Lewis J. ..... Irvine, CA
Fletcher, George W. ..... Greenville, SC
Foster, John H. ..... Weston, CT
Foulke, Randall L. ..... Raleigh, NC
Garner, Gordon R. ..... Prospect, KY
Giavara, Sutiri ..... Stratford, CT
Gilbertsen, Robert H. ..... Libertyville, IL
Grigoropoulos, Sotirios G. ..... Athens, Greece

Herrick, Robert A. ..... Cary, NC
Hickman Jr., H. Lanier ..... Ocean Pines, MD
Hixson, Thomas D. ..... Alexandria, LA
Holt, Leonard L. ..... Santa Rosa, CA
Jain, Ravinder K. ..... Stockton, CA
Johnson, Carl R. ..... Wanwatosa, WI
Jones, Gregory V. ..... Anchorage, AK
Kaylor, Frank B. ..... Brentwood, CA
Kelkar, Uday G. ..... Maharashtra, India
Kelly, Harlan G. ..... Vancouver, BC
Kennedy, David D. ..... Palo Alto, CA
Kern, James W. ..... Swampscott, MA
Krafthefer, Brian C. ..... Stillwater, MN
Lagnese, Joseph F. ..... Allison Park, PA
Ledbetter, J. Leonard ..... Kennesaw, GA
Lindmark, Ulf M. ..... Westlake Village, CA
Martenson, Dennis R. ..... Medina, MN
Mbachu, Frank C. ..... Sugar Land, TX
McGarry, Frederick J. ..... Deerfield, NH
McMasters, Foster A. ..... Bay Village, OH
Medine, Allen J. ..... Boulder, CO
Miller, Truesdell C. ..... Crossville, TN
Modjeski, Dorian ..... Palm Harbor, FL
Mohanka, Shyam S. ..... Schenectady, NY
Moore, Richard D. ..... Sarasota, FL
Murray, William T. ..... Buda, TX
Murthy, Prahlad N. ..... Wilkes-Barre, PA
Newberry, Conrad F. ..... Pacific Grove, CA
Peaks, Gerald W. ..... Chesapeake, VA
Rimer, Alan E. ..... Hillsborough, NC
Robinson, Peter E. ..... Hollywood, FL
Seagle, Edgar F. ..... Rockville, MD
Sebesta, Stephen J. ..... Westlake, OH
Shea, Timothy G. ..... Fairfax Station, VA
Shearer, John S. ..... Longwood, FL
Sprester, Forrest R. ..... Fairfax, VA
Stahl, James F. ..... Rancho Palos Verdes, CA
Stander, Leo H. ..... Cary, NC
Tow, Harry A. ..... Visalia, CA
Uhler, Robert B. ..... Longmont, CO
von Autenried, Guido ..... Park Ridge, NJ
Voorhees, J. Richard ..... Longwood, FL
Watt, J. Thomas ..... York, PA
Whitman, Ira L. ..... Cranbury, NJ
Wolkstein, Melvin ..... Union, NJ
Xie, Yuefeng ..... Middletown, PA

ENVIRONMENTAL ENGINEER AND SCIENTIST (JOURNAL) FUND

Baldwin, Geoffrey G. ..... New York, NY
Clapp, Lee William ..... Kingsville, TX
Corson, John T. ..... Kingsford, MI
Dominy, Matthew ..... Gilbert, AZ
Dotson, Kyle B. ..... Carmel, CA
Lenard, John F. ..... Storrs, CT
Lindmark, Ulf M. ..... Westlake Village, CA
Middlebrooks, E. Joe ..... Superior, CO
Mohanka, Shyam S. ..... Schenectady, NY
Novotny, John F. ..... Bemus Point, NY

EXCELLENCE IN ENVIRONMENTAL ENGINEERING AND SCIENCE (E3S) FUND

Baldwin, Geoffrey G. ..... New York, NY
Bentwood, Richard W. ..... Glendora, CA
Corson, John T. ..... Kingsford, MI
Decker, Thomas E. ..... Aldie, VA
Dee, William P. ..... Davenport, FL
Eklund, Carl W. ..... Carmel, CA
Lindmark, Ulf M. ..... Westlake Village, CA
Mohanka, Shyam S. ..... Schenectady, NY
Peoples, Robert F. ..... Atlanta, GA
Rodenbeck, Sven E. ..... Lawrenceville, GA
Schwartz, Henry G. ..... Naples, FL
Velazquez, Jose F. ..... Denver, CO

KAPPE LECTURE FUND

Baldwin, Geoffrey G. ..... New York, NY
Chen, Jeffrey J. ..... Palo Alto, CA
Lindmark, Ulf M. ..... Westlake Village, CA
Liu, Charles (Xiaosha) ..... Dix Hills, NY
Monroe, Edward W. ..... Pittsburgh, PA
Whitman, Ira L. ..... Cranbury, NJ
Young, James Clinton ..... Fayetteville, AR

ENVIRONMENTAL ENGINEERING AND SCIENCE FOUNDATION

The Environmental Engineering and Science Foundation (a 501(c)(3) organization) is listed in IRS Publication 78, Cumulative List of Organizations described in Section 170(c) of the Internal Revenue Code of 1986. As such it is eligible to receive tax-deductible charitable contributions.

- **Environmental Engineering and Science Foundation General Fund.** The general fund for the Environmental Engineering and Science Foundation.
- **The Fred Pohland Memorial Fund**. This fund supports the Frederick George Pohland Medal which is awarded annually to an individual who has made sustained and outstanding efforts to bridging environmental engineering research, education, and practice.
- **The K-12 Student Competition Fund.** This fund is used to support ongoing K-12 student competitions.
- **The Students & Young Professionals Fund.** This fund supports student activities in environmental engineering and environmental science at colleges and universities. The S&YP Fund is used to facilitate events on or off-campus that will assist students in their academic advancement, enhance their understanding of the profession, and support their career aspirations.
- **The W. Brewster Snow Award Fund.** This fund supports the W. Brewster Snow Award, which is awarded annually to an outstanding engineering student pursuing or recently completing a Masters degree in Environmental Engineering or closely-related degree program.
- **The W. Wesley Eckenfelder Fund.** This memorial fund was established in the name of W. Wesley Eckenfelder Outstanding Graduate Research Award, the W. Wesley Eckenfelder Industrial Waste Management Medal, the W. Wesley Eckenfelder Distinguished Leadership Award, and the W. Wesley Eckenfelder University Lectures.

Donations can be made online at:
http://www.eesfoundation.org/Donate.php.

EESF GENERAL FUND

Abron, Lilia..... Washington, DC
Ahern, Daniel ..... Beaufort, SC
Bratt, Gary..... Abingdon, MD
Brown, Jeanette..... Darien, CT
Buzby, Mary ..... Barnegat Light, NJ
Compton, Glenn ..... Phoenix, AZ
Kaylor, Frank ..... Brentwood, CA
Kohlhoff, Karl..... Gilbert, AZ
Kuhn, Paul.....Maple Grove, MN
LaFever, Howard..... Cazenovia, NY
Lue-Hing, Cecil .....Town & Country, MO
Modjeski, Dorian..... Palm Harbor, FL
Mbachu, Frank .....Houston, TX
Vasconcelos, John .....So. Pasadena, CA
Vasuki, Nuggehalli .....Dover, DE
Vicory, Alan..... The Villages, FL
Williams, Robert C..... Schertz, TX

FRED POHLAND MEMORIAM FUND

Vasuki, Nuggehalli .....Dover, DE

K-12 STUDENT COMPETITION FUND

Pope, Richard J. .....New York, NY
Short, Kevin P. .....
Vasuki, Nuggehalli .....Dover, DE

STUDENT & YOUNG PROFESSIONALS FUND

Murray, William T. ..... Buda, TX
Selna, Michael..... Huntington Beach, CA
Vasuki, Nuggehalli .....Dover, DE

W. BREWSTER SNOW FUND

Graef, Stephen ..... Louisville, NY
Vasuki, Nuggehalli .....Dover, DE

W. WESLEY ECKENFELDER FUND

Vasuki, Nuggehalli .....Dover, DE

http://www.eesfoundation.org/donate/ScholarshipCampaign.php

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". Towards that end, the Board of EESF has created four annual scholarships for Environmental Engineering and Environmental Science students at the undergraduate and Master's levels.

EESF is seeking your support for this Campaign. Your donation will be vital to achieving our goal of funding the four scholarships at a level of $2,500 per student per year for an annual goal of $15,000 to provide future funding. Upon achieving this goal, EESF will select one student in each of the following categories:

- Undergraduate Environmental Engineering
- Master's level Environmental Engineering
- Undergraduate Environmental Science
- Master's level Environmental Science

The two undergraduate scholarships will target students transferring from Community Colleges as this group has historically been overlooked under most available scholarship programs.

Please help achieve our goal by contributing at a level of $50, $100, $250, $500 or consider making a convenient automatic monthly donation from your credit card of $10 to $50 per month. Once set up, it will be automatically deducted until such time as you decide to terminate the contribution. We sincerely thank you for helping EESF achieve our mission of supporting education in the fields of Environmental Engineering and Environmental Science.

We encourage you to make a donation by going to: **http://www.eesfoundation.org/donate/ScholarshipCampaign.php**.

We also accept donations by check and ACH/Wire transfers. One other contribution mechanism that is "tax-smart" is to make a qualified charitable distribution (QCD) from your IRA (other than a SEP or SIMPLE IRA) to EESF. You must be at least age 70½ when the distribution is made. Using this approach may avoid tax on the portion of your required minimum distribution (RMD) that you contribute to EESF. The contribution must flow directly from your IRA trustee to EESF to avoid taxation. For more information, please contact your IRA administrator and see IRS Publication 590-B. To make a contribution by check, ACH/Wire transfer, or a QCD please contact Burk Kalweit at BKalweit@aaees.org.

Member News, *continued from page 11*

tion management, mentoring and business development skills based on his work for firms in Maryland and New York. In his previous role, Kerr was an Infrastructure Modeling Manager, where he managed and supported water and sewer hydraulic modeling projects in the U.S. and Canada, including training for staff and clients. Additionally, he has managed small and large projects in the Northeast and Mid-Atlantic region related to water distribution and sewer collection systems. He has been a Board Certified Environmental Engineer in Water Supply and Wastewater since 2007. He is also a member of the Water Environment Federation (WEF)/Chesapeake Water Environment Association as well as the American Water Works Association (AWWA)/Chesapeake Section.

IN MEMORIAM

Joseph Earl Herndon, Jr.
October 18, 1934 - February 18, 2019
Clemson, South Carolina | Age 84

Retired US Army Colonel Joseph Earl Herndon, Jr., 84, went to be with our Heavenly Father on Monday, February 18, 2019. Born in Hilda, SC, he was the son of the late Earl and Jennie Herndon, and was predeceased by beloved wife Jacquelyn; and brother-in-law, Charles Lawrence. Earl is survived by children: Joe Herndon, Laurens; Heather Herndon, Clemson; Todd Herndon (Betsy), San Antonio, TX; Grandchildren: Grace, Wright, Meredith Herndon, San Antonio, TX; sister, Polly Ann Wells (Frank), Simpsonville; nephews: Dave Wall (Marissa), Mike Wall (Laura); Niece: Jennifer Wall; sister-in-law Ruth Lawrence, Simpsonville; nephew, Charles Lawrence; niece, Lyn Mixson (John); great niece, Meredith Mixson and great nephew, Drayton Mixson.

Earl earned a Bachelor of Science in Civil Engineering degree from Clemson in 1956 and a Masters degree in Public Health from the University of Minnesota in 1961. While serving in the Army for 30 years Earl received the following awards: Legion of Merit; Meritorious Service Medal; Army Commendation Medal; Army Achievement Medal; National Defense Service Medal; Army Service Ribbon; and Overseas Service Ribbon.

Earl, with Jackie, began his Army career in San Antonio, TX. Earl moved to Minneapolis, MN to continue his education, earning a Masters degree from the University of Minnesota with high honors. Earl and Jackie were stationed in many locations including Munich Germany; Edgewood Arsenal, MD; Fort Leavenworth, KS; Frankfurt Germany and Alexandria, VA making lifelong friends that are spread all over the world. While stationed in Virginia for 16 years, Earl enjoyed frequent trips to Chincoteague, VA fishing for flounder, crabbing, clamming, boating and sharing time with family and friends. Earl served as a Deacon at Plymouth Haven Baptist Church and was active in leadership roles for the Boy Scouts of America.

Upon retiring from the Army in 1987, Earl relocated to Seneca, SC and began a new career as the Director of Examinations for the National Council of Examiners for Engineering and Surveying (NCEES). For 25 years, Earl and Jackie lived in their dream home on Lake Keowee. They hosted multiple church groups, Sunday school activities, and other parties. Earl was fond of providing pontoon boat tours of the lake to friends and family. Earl loved creating elaborate treasure hunts for his grandchildren, great niece and nephew on the lake front property. Earl explored his artistic side during retirement creating many treasured Santa Claus and dolphin wood carvings as well as tables using reclaimed wood from Hardin Hall. Earl's grandchildren were blessed by his wood carvings in the form of handmade sling-shots. Earl and Jackie loved participating in the First Baptist Church of Clemson's college student "adoption" program providing mentoring, emotional support and reflecting the love of Jesus to many students that participated in the program over many years. Earl and Jackie were philanthropic givers to Furman and Clemson Universities helping to fund numerous projects like the building the Class of 1956 Academic Success Center. In addition to serving his country in the Army, Earl continuously served others throughout his lifetime driving retired military in the South Carolina Upstate to the Veterans Hospital, serving leadership roles in the Rotary International and serving on various committees at Clemson Downs.

In 2012, Earl and Jackie moved to Clemson Downs where they enjoyed the final stages of retirement surrounded by friends and many wonderful caregivers. Earl befriended many Clemson students in the Communications program sharing stories about the time he spent as the Manager of the Clemson Football team under Coach Frank Howard in the early 50's. The Clemson Veterans Project documented Earl's military service and is available at the Library of Congress. The following link is part of the documentary created by Clemson students in the Communications Major.

Courtesy of http://www.tributes.com.

Mr. Herndon had been a Board Certified Environmental Engineer in Sanitary Engineering since 1972. He had attain Life status and had previously served as an AAEES State Representative for the state of South Carolina.

Member News, *continued on page 28*

The 49th Annual AAEES Awards Luncheon and Conference: A Celebration of Excellence in Environmental Engineering and Science

by Yolanda Moulden

The 2019 AAEES Awards Luncheon and Conference returned to the prestigious National Press Club in Washington, D.C., on April 25, 2019. This annual event celebrates Excellence in Environmental Engineering and Science. Distinguished environmental engineers, environmental scientists, educators, students, and professionals are celebrated for their significant contributions to the profession and to the people and communities they serve. Awards are presented for the winning entries in the 2019 Excellence in Environmental Engineering and Science (E3S) and Environmental Communications (EComm) awards competitions. The festivities also features renowned speakers in the field of environmental engineering and science.

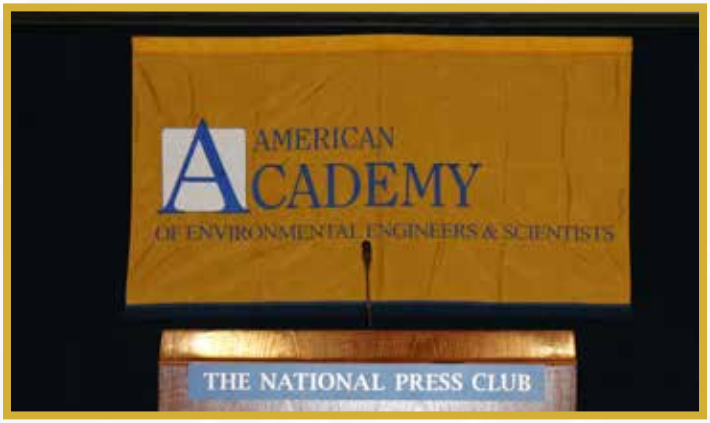
THE AAEES CONFERENCE

Dr. Domenic Grasso, Chancellor and Professor at University of Michigan-Dearborn, opened the conference to discuss *NAE's Grand Challenges for Environmental Engineering in the 21st Century*.

The National Academies of Sciences, Medicine, and Engineering's study brought together experts in a wide range of fields who, with input from the scientific community and the broader public, identified the foremost challenges that environmental engineers and scientists will be expected to address over the next several decades. The study also describes how practitioners in the field — with assistance from colleges and universities — will need to evolve to better address those challenges. The study's conclusions are a testament to the multidisciplinary, pragmatic, systems-oriented approach that characterizes environmental engineering.

Following Dr. Grasso's presentation, Superior Achievement and Grand Prize winners of the E3S Competition were allowed to take the stage. The session allows the presenters to give more insight into the complexities and challenges of their respective projects. Presentations for the 2019 sessions were as follows:

- ***Multipronged Collection System Odor Control Program at OCSD; Less Odors and Lower Costs***, presented by **Kathleen Millea**, Director of Engineering, Orange County Sanitation District.
- ***Emergency Water Treatment with Ferrate(VI) in Response To Natural Disasters*** presented by **Dr. Yang Deng**, Professor, Earth and Environmental Studies, Montclair State University
- ***When the Detour Turns Out to be a Shortcut: Partial Denitrification (PdN) – Anammox as Alternative Strategy for Mainstream Deammonification*** presented by **Haydee De Clippeleir**, Program Manager, Research, DC Water & **Stephanie Klaus**, Virginia Tech
- ***The Water Forward Integrated Water Resource Plan - Austin Water*** presented by **Dan Rodrigo**, Senior Vice President and Technical Specialist, CDM Smith
- ***Tujunga Spreading Grounds Enhancement Project*** presented by **Steve Kuo, P.E.**, Watershed Management, Water Resources Division, Los Angeles Department of Water and Power
- ***Town of Moorefield/Hardy County Regional WWTP Upgrade with the MOB™ Process*** presented by **Sage Chang**, Director of Research and Development, Nuvoda
- ***Nutley Site Remediation Project on Behalf of Hoffmann-La Roche*** presented by **Nidal Rabah**, Vice President and Director of Engineering, TRC Environmental



top left AAEES presenting the 49th Annual AAEES Awards at the National Press Club in Washington, DC

top right Dr. Domenic Grasso opens the morning conference by discussing NAE's Grand Challenges for Environmental Engineering in the 21st Century

bottom left Attendees of the AAEES Poster Session

THE AAEES AWARDS

We're honored that David Gaddis, P.E., BCEE, served again as our Master of Ceremonies. Before the start of the awards ceremony, AAEES President Kristin Morico, P.E., BCEE, introduced the keynote speaker, Dr. Rula Deeb.

Dr. Rula Deeb, BCEEM, PMP, Vice President of Geosyntec Consultants, provided more insight of the NAE's Grand Challenges for Environmental Engineering in the 21st Century with her presentation, *Environmental Engineering for the 21st Century: A Practitioner's Perspective ... and a Case Study* — offering a practitioner's perspective on incorporating the grand challenges into the work they perform on behalf of clients and stakeholders.

The Honorees

The AAEES Awards were established to honor, recognize, and celebrate distinguished environmental engineers, environmental scientists, educators, students, and professionals.

The Awards Ceremony were kicked off by Kristin Morico who presented the awards for International Honorary Member Award, Honorary Member Award, and the Stanley E. Kappe Award.

Dr. Chihpin Huang was honored as the 2019 International Honorary Member. Dr. Huang is University Chair Professor in environmental engineering, received the B.Sc. and M.S. degrees from National Chang Kung University in 1981 and 1983. He received his Ph.D. from the University of Delaware, and then joined the faculty at National Chiao Tung University (NCTU) in 1990. He is known for his intensive research activities covering a broad array of scientific topics on the physical, chemical, and biological aspects of environmental systems, specifically water. He is the most prominent, decorated, and honored professor in the field of environmental engineering in Taiwan.

The late Dr. Gordon Maskew Fair was honored with the AAEES Honorary Member Award (In Memoriam). Dr. Fair is best remembered for his profound influence on the sharpest young minds in the engineering field. It is said that his teachings and insights were greatly responsible for the present advanced state of engineering today. He was an eloquent advocate of environmental harmony and the application of engineering skills to attain this goal. In 1971, AAEES established the Gordon Maskew Fair in his honor.

The 2019 Stanley E. Kappe Award was presented to R. Benson Pair, Jr., P.E., BCEE. Mr. Pair, who serves on the AAEES Board as the trustee representing the American Institute of Chemical Engineers, Board liaison to the Sustainability Committee, a member of the Major Partners Committee, and the American Academy of Environmental Scientists Certification Board (AAESCB), is the Chief Technology Engineer (CTE) - Environmental at KBR, Inc., an international engineering,

top left Kristin Morico presents Dr. Yang Deng with the Superior Achievement in Environmental Engineering and Science Award for his project, Emergency Water Treatment with Ferrate(VI) in Response to Natural Disasters.

top right AAEES Luncheon Keynote Speaker Dr. Rula Deeb gives a practitioner's perspective on incorporating the grand challenges into the work they perform on behalf of clients and stakeholders.

bottom left Kristin Morico presents Lisa Van Riper with the Grand Prize in Environmental Communications for Alexandria Renew Enterprises' project, Turning a Pump Station into a Learning Destination.

top left AAEES Vice President Dr. Lilia Abron and 2019 Science Award Recipient Dr. Joseph Cotruvo

top right R. Benson Pair, Jr., is presented with the 2019 Stanley E. Kappe Award.

top left Dr. Ed Bouwer presents Dr. Sarina Ergas with the 2019 Excellence in Environmental Engineering and Science Education Award as David Gaddis looks on

top right Dr. Yuefeng Xie; Dr. Yang Deng, E3S Superior Achievement in Environmental Engineering and Science Award Winner; 2019 International Honorary Award Recipient, Dr. Chihpin Huang; and Dr. C.P. Huang

bottom left Kristin Morico presents the 2019 Environmental Communications Honor Award to Ali Poosti and Art Castro for Bureau of LA Sanitation - Los Angeles' One Water LA

procurement and construction company. KBR serves the hydrocarbon industry, including LNG, refining, petrochemicals and polymers, ethylene, and fertilizer.

Dr. Edward Bouwer presented the Excellence in Environmental Engineering & Science Education Award, The Innovyze Excellence in Computational Hydraulics/Hydrology Award, and the William Brewster Snow Award.

The Excellence in Environmental Engineering & Science Education Award was awarded to Sarina Ergas, Ph.D., P.E., BCEE. Dr. Ergas is a Professor and Graduate Program Director in the Department of Civil & Environmental Engineering at the University of South Florida, Tampa. She joined the USF faculty in 2009 after 15 years at the University of Massachusetts, Amherst. She teaches Biological Principles in Environmental Engineering, Capstone Water Resources/Environmental Engineering Design and Mentoring Novice Researchers. She has mentored 60 graduate students, 8 postdocs, 70 undergraduates, 10 middle and high school science teachers and 15 high school students on research.

Dylan Wood was presented with the 2019 Innovyze Excellence in Computational Hydraulics/Hydrology Award sponsored by Innovyze. Dylan Wood's academic career has revolved around the goal of pursuing a highly multidisciplinary skillset as often demanded of researchers in the field of computational hydrology. In 2014, Dylan earned a B.S. in Physics from Austin Peay State University (APSU), where he also minored in computer science and mathematics. His independent research at APSU included developing software for atomic structure computations and initiating a near-space program for stratospheric observations by high altitude balloon. His current research focuses on mitigation of flooding risks posed to coastal areas by tropical cyclones. Specifically, his work develops coupled storm surge/structural fragility models for forecasting of flood defense system failures during storm events. His Faculty Advisor was Ethan Kubatko.

The 2019 William Brewster Snow Award was presented to Monica C. Resto-Fernandez. Ms. Resto-Fernandez is currently a candidate for a Master's degree in Environmental Engineering at Mercer University with a graduate concentration in Engineering for Development. She received her Bachelor of Science in Civil Engineering from the University of South Florida in 2016 with an Environmental Engineering concentration, graduating Magna Cum Laude. Following completion of her Master's degree this year, she plans to pursue a PhD in Environmental Engineering, working on research at the intersection of international development, hydrogeology, and water systems. Her career plans include working on international development projects that focus on improving groundwater quality as a vital resource for developing communities, and then returning to academia to shape engineering and geoscience student theoretical and practical knowledge learning as a university professor.

top left Dr. Ed Bouwer, Chair of the AAEES/AEESP Joint Awards Sub-Committee

top right Kathleen Millea displays the Superior Achievement in Environmental Engineering and Science Awards for Orange County Sanitation District's Multipronged Collection System Odor Control Program at OCSD: Less Odors and Lower Costs

bottom left Priyanka Ali; Nadezhda Zalivina; Rahil Fofana; Christine deBarbadillo; Tri Le; Haydee De Clippeleir; Aklile Tesfaye; Ahmed Al-Omari; and Stephanie Klaus. District of Columbia Water and Sewer Authority and Hampton Roads Sanitation District won Grand Prize in Research for When the Detour Turns Out to be a Shortcut: Partial Denitrification (PdN) — Anammox as Alternative Strategy for Mainstream Deammonification

The next two awards, the W. Wesley Eckenfelder Graduate Research Award and the Edward J. Cleary Award were presented by AAEES President-Elect James W. Patterson, BCEEM.

The 2019 W. Wesley Eckenfelder Graduate Research Award was presented to Christopher Lawson. Mr. Lawson is currently a PhD Candidate in Environmental Engineering at the University of Wisconsin-Madison working with Professor Katherine McMahon. His research investigates the metabolism of anaerobic ammonium-oxidizing (anammox) bacteria and the interactions they engage in with other poorly characterized nitrogen cycling microorganisms using systems biology approaches. His goal is to understand and predict how local metabolic interactions between organisms in microbiomes give rise to emergent process-level functions, such as carbon and nitrogen cycling during wastewater treatment. Following graduation in the Fall of 2019, Chris plans to continue his career in research and teaching, focused on advancing the engineering of microbiomes for resource recovery from waste streams.

Christopher R. Schulz, P.E., BCEE, was presented with the 2019 Edward J. Cleary Award. Mr. Schulz is a Senior Vice-President with CDM Smith with over 32 years of experience designing water treatment facilities in the United States and throughout the world. He holds 11 US patents in water treatment technologies, has published multiple articles in peer-reviewed journals, presented more than 70 papers in professional engineering conferences, and co-authored a book on surface water treatment for communities in developing countries. He has served as technical director or process lead on dozens of water treatment plant designs involving advanced processes such as UV, ozone, advanced oxidation and biological filtration. He has been active in water treatment process research, and his diligence has led to the development of new technologies for ozone dissolution, ozone disinfection of water mains, hydraulic flocculation, and field calibration of ultraviolet (UV) intensity sensors. Early in his professional career, Mr. Schulz was employed by the World Bank and served as a research assistant developing low-cost water and sanitation technologies in developing countries. Over the past ten years, he volunteered with private companies in Guatemala, Ghana, and India to develop simple household water filter technologies for communities without access to safe water supplies.

Vice President Lilia Abron, Ph.D., P.E., BCEE, presented the last two individual awards — The Science Award and the Gordon Maskew Fair Award.

The Science Award went to Joseph A. Cotruvo, Ph.D., BCES. Dr. Cotruvo is President of Joseph Cotruvo & Associates, Water, Environment and Public Health Consultants He is Research Professor in Chemistry and Environmental Sciences at the University of Toledo, and on their Green Chemistry and Engineering Science Advisory Board. He serves on the World Health Organization's Guidelines for Drinking Water Quality Committees and on numerous panels on drinking water qual-

top left Dylan Wood won the 2019 Innovyze Excellence in Computational Hydraulics/Hydrology Award

top right Ali Poosti and Art Castro accept the Grand Prize in Design from Kristin Morico for Los Angeles Department of Water and Power's project Tujunga Spreading Grounds Enhancement Project

bottom left Nuvoda, LLC, won Grand Prize in the Small Firms category for Town of Moorefield/Hardy County Regional WWTP Upgrade with the MOB™ Process. Sage Chang was on hand to accept the award.

ity, desalination, water reuse, Singapore's Water Standards, and potable reuse projects for Orange County, San Diego and Los Angeles, California. He was on the Board of Directors of the DC Water and Sewer Authority for 8 years.

The Academy's most prestigious individual award, the Gordon Maskew Fair Award, was presented to David A. Dzombak, Ph.D., P.E., BCEE, DWRE, NAE. Dr. Dzombak is the Hamerschlag University Professor and Head of the Department of Civil and Environmental Engineering at Carnegie Mellon University. The emphasis of his research and teaching is on water quality engineering, water resource sustainability, and energy-environment issues. Dr. Dzombak's professional service activity has included the National Academies Roundtable on Science and Technology for Sustainability, the National Academies Roundtable on Unconventional Hydrocarbon Development, and the National Academies Water Science and Technology Board. He was elected to the National Academy of Engineering in 2008.

EXCELLENCE IN ENVIRONMENTAL ENGINEERING AND SCIENCE AWARDS

Following the presentation of the individual awards, it was time to announce the winning projects of the 2019 Excellence in Environmental Engineering and Science Competition. This year included a tie for the top prize, Superior Achievement in Environmental Engineering and Science.

Research

There were two award-winning projects in Research. They were:

- **Honor Award:** CDM Smith for *Water Purification Technology Evaluation and R&D Testing Project*, Jacksonville, Florida. Engineer-in-Charge was David Prah, P.E., BCEE. Accepting the award on behalf of CDM Smith was is Dan Rodrigo.
- **Grand Prize:** District of Columbia Water and Sewer Authority and Hampton Roads Sanitation District for *When the Detour Turns Out to be a Shortcut: Partial Denitrification (PdN) – Anammox as Alternative Strategy for Mainstream Deammonification*, District of Columbia. Engineers-in-Charge were Christine deBarbadillo, P.E,. and Charles Bott, Ph.D., P.E., BCEE. Accepting the award were Christine deBarbadillo, Stephanie Klaus, Haydee De Clippeleir, Tri Le, Priyanka Ali and Ahmed Al-Omari.

Planning

The Planning category had two winning projects. They were:

- **Honor Award:** Orange County Sanitation District for *Wastewater Collection and Treatment Facilities Master Plan*, Fountain Valley, California. Engineer in Charge

top left Stephanie Klaus and **top right** Haydee De Clippeleir at the morning session presenting District of Columbia Water and Sewer Authority and Hampton Roads Sanitation District Grand Prize in Research winner, When the Detour Turns Out to be a Shortcut: Partial Denitrification (PdN) — Anammox as Alternative Strategy for Mainstream Deammonification

bottom left Kristin Morico presents Dominic Giaudrone with the Honor Award in the Environmental Sustainability category for CDM Smith's project, Well 12A Technical, Design, and Remediation Support

top left Master of Ceremonies, David Gaddis

top right Nidal Rabah, Vice President and Director of Engineering, TRC Environmental, presented insight on the Nutley Site Remediation Project on Behalf of Hoffmann-La Roche at the morning session

bottom left Monica C. Resto-Fernandez is presented with the 2019 W. Brewster Snow Award.

top left AAEES Vice President, Dr. Lilia A. Abron

top right OCSD's Kathy Millea and LACSD's Wendy Wert

bottom left Kristin Morico presents Dan Rodrigo with CDM Smith's Grand Prize in Research for The Water Forward Integrated Water Resource Plan - Austin Water. Dan Rodrigo also accepted the Honor Award in the Research category for CDM Smith's Water Purification Technology Evaluation and R&D Testing Project

was Eros Yong, P.E., BCEE. Kathleen Millea was on hand to accepted the award.

- **Grand Prize:** CDM Smith for *The Water Forward Integrated Water Resource Plan - Austin Water*, Austin, Texas. Engineer-in-Charge was Christina Petersen, P.E. Accepting the award was Dan Rodrigo.

Design

The Design category two winning projects. They were:

- **Honor Award:** CDM Smith for *Queen Ditch Restoration Project*, Newark, New Jersey. Thomas Schoettle, P.E., was the Engineer-in-Charge.
- **Grand Prize:** Los Angeles Department of Water and Power for *Tujunga Spreading Grounds Enhancement Project*, Los Angeles, California. Engineer in Charge, David Pettijohn, P.E., BCEE. Accepting the award were Art Castro and Ali Poosti.

Small Projects

Small Projects are those costing less than $5 million in capital cost or less than $500,000 in annual costs. Any type of project meeting these limitations may enter this category. The one winning project in this category was:

- **Honor Award:** Housing & Development Board for *Development of Floating Solar for use in Reservoir and Coastal Marine Conditions*, Tengeh Reservoir, Singapore. Vincent Lim Han was the Engineer in Charge.

Small Firms

The Small Firms category is any project entered by a firm that has annual gross revenue of $5 million or less. There was one award in this category:

- **Grand Prize:** Nuvoda, LLC for *Town of Moorefield/ Hardy County Regional WWTP Upgrade with the MOB™ Process*, Moorefield, West Virginia. Engineer in Charge was Jason Calhoun, P.E. Accepting the award was Sage Chang.

Environmental Sustainability

There were three award-winning projects in Environmental Sustainability. They were:

- **Honor Award:** CDM Smith for *Well 12A Technical, Design, and Remediation Support*, Tacoma, Washington. Engineer-in Charge, Dominic Giaudrone, P.E., was on hand to accept the award.
- **Honor Award:** Los Angeles Department of Water and Power for *Countering the Impacts from Increased Urbanization Through Large Scale Innovative Regional Stormwater Capture in Los Angeles – Tujunga Spreading Grounds Enhancement Project*, Los Angeles, California, Engineer in charge was David Pettijohn,

top left Rebecca Hollender, Tom Lyon, Chandra Patel, Marc Sotsky, Dawn Pompeo, and Ken Siet display the Grand Prize in Environmental Sustainability for TRC Environmental Corporation's project, Nutley Site Remediation Project on Behalf of Hoffmann-La Roche

top right AAEES President-Elect James Patterson and 2019 Edward J. Cleary Award recipient, Christopher R. Schulz

bottom left Kristin Morico presents an Honor Award in Environmental Sustainability to Art Castro and Steve Kuo for Los Angeles Department of Water and Power's Countering the Impacts from Increased Urbanization Through Large Scale Innovation Regional Stormwater Caputre in Los Angeles - Tujunga Spreading Grounds Enhancement Project

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P.E., BCEE. Accepting the award were Art Castro and Ali Poosti.

- Grand Prize: TRC Environmental Corporation for *Nutley Site Remediation Project on Behalf of Hoffmann-LaRoche*, Nutley, New Jersey. Person in charge was Rebecca Hollender. Accepting the award were Tom Lyon and Dawn Pompeo.

Superior Achievement for Excellence in Environmental Engineering and Science

Superior Achievement for Excellence in Environmental Engineering and Science is the top award for the E3S Competition. For only the second time in it's history, there was a tie. The winning projects are:

- Orange County Sanitation District for *Multipronged Collection System Odor Control Program at OCSD: Less Odors and Lower Costs*, Fountain Valley, California, Engineer in charge was Jeffrey Brown, P.E., BCEE. Accepting the award is Kathy Millea. This project was entered in the Operations/Management category.
- Yang Deng, Ph.D., P.E. for *Emergency Water Treatment with Ferrate(V1) in Response to Natural Disasters*, Montclair, New Jersey. Accepting the award was Engineer-in-Charge Yang Deng. This project was entered in the University Research category.

ENVIRONMENTAL COMMUNICATIONS AWARDS

Following are the winning projects in the 2019 Environmental Communications Awards.

- **Honor Award:** Bureau of LA Sanitation – Los Angeles for *One Water LA*. Accepting the award were Art Castro and Ali Poosti.
- **Grand Prize:** Alexandria Renew Enterprises for *Turning a Pump Station into a Learning Destination*. Accepting the award was Lisa Van Riper.

Following the awards luncheon, AAEES held a poster session in which attendees were able to interact with the E3S award winners.

Full profiles of all of the winning projects and award recipients were published in the Spring 2019 (V55, N2) issue of *Environmental Engineer and Scientist*. They are also posted on http://www.aaees.org and http://www.eesfoundation.org.

All photos of this event can be found at on our Flickr page at https://www.flickr.com/photos/aaeesdotorg or our Facebook page at https://www.facebook.com/AAEESdotORG.

As always, AAEES would like to thank all entrants, honorees, attendees, volunteers, sponsors, and participants who collectively contribute to the continued success of the AAEES Awards Luncheon and Conference.

And we would like to offer a special 'thank you' to the organizations and corporations represented on this page and our AAEES Patrons on page 2.

top left Dr. David Dzombak, 2019 Gordon Maskew Fair Award recipient

top right Kristin Morico presents the Grand Prize in Environmental Sustainability to Dawn Pompeo and Tom Lyon for TRC Environmental Corporation's project, Nutley Site Remediation Project on Behalf of Hoffmann-LaRoche

bottom left Steve Kuo at morning session presenting Los Angeles Department of Water and Power's Tujunga Spreading Grounds Enhancement Project

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left Dr. Gordon Maskew Fair was installed as the 2019 Honorary Member (In Memoriam)

top right Christopher Lawson, 2019 W. Wesley Eckenfelder Graduate Research Award recipient, pictured with Christine Tam

Member News, *continued from page 27*

John Harry Jenks
July 20, 1924-Dec. 28, 2017
Atherton, CA, California

John spent his early childhood in Iowa and North Carolina and at the age of 13 his family relocated to Palo Alto where he remained until moving to Atherton in 1963. He graduated from Stanford with a BA and two masters degrees in Civil Engineering (1948) and played the violin in the Stanford Symphony. In WWII, he served as a Navy Lieutenant in the Philippines.

He was an avid athlete who enjoyed skiing, tennis, and basketball. He built numerous small sail boats and sailed competitively, ranking in the top ten nationally for a decade, and three years as the Pacific Coast Champion. He received his pilot's license in 1949 and owned numerous airplanes, which he mostly flew for business.

During his 60-year consulting career in engineering, his firm was involved in the design of 150 wastewater and reclamation projects, 11 of which were recipients of Engineering Excellence Awards, and three judged to be the best environmental engineering project nationally for that year. Merging in 1979, the company is currently known as Kennedy/Jenks Consultants.

He's survived by his wife Laurie (married in 1952), children (Sharon, Linda, David, Nancy), grandchildren (Andrew, Emily, Kelly, Peyton, Bix, Renny), and 4 great grandchildren (Hayden, Austin, Blake, and Laine).

He was active in leadership roles at Menlo Park Presbyterian Church since 1953, served on Board of Trustees of Westmont College (35 years), Board of Directors and Trustee of Mount Hermon Association, Board of Directors of Presbyterian Lay Committee, and a Director of the Church of the Pioneers Foundation.

John lived a life of service, leadership, and devotion to Jesus, whom he so dearly loved.

Courtesy of Palo Alto Online (https://www.paloaltoonline.com)

Mr. Jenks had been a Board Certified Environmental Engineer in General Environmental Engineering since 1974 and had attained Life status.

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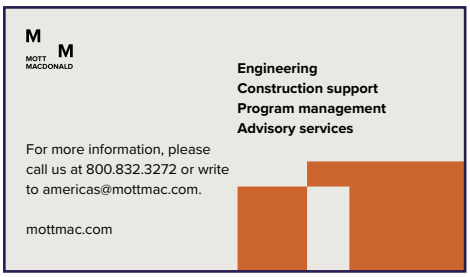

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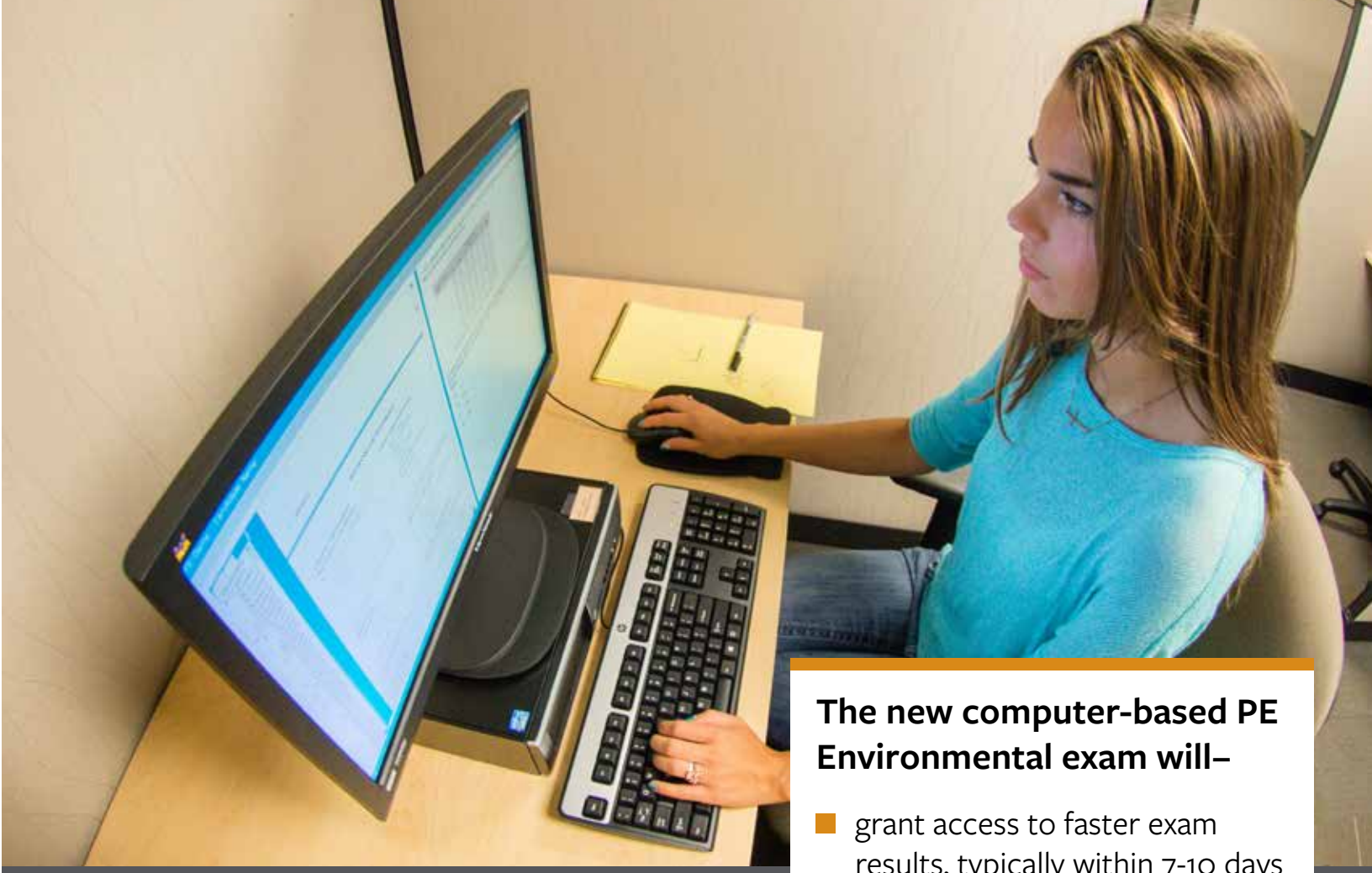

EXAMS

Registration is now open for the new computer-based PE Environmental exam

Registration and scheduling is now open for the new computer-based Principles and Practices of Engineering (PE) Environmental exam. **The first testing appointments are available starting April 1, 2019.** Register for the new PE Environmental exam by logging in to your MyNCEES account and following the onscreen instructions.

The new computer-based PE Environmental exam will–

- grant access to faster exam results, typically within 7-10 days
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Scientists' Luncheon: Interbasin Transfers and Water Risk in the United States

David Dzombak PhD, PE, BCEE, DWRE, NAE
Carnegie Mellon University

Organized by WEF, AEESP, and AAEES

Monday, September 23, 2019
12:00-1:30 pm

The Water Environment Federation (WEF), the Association of Environmental Engineering and Science Professors (AEESP), and the American Academy of Environmental Engineers and Scientists (AAEES) are pleased to present the 2019 WEFTEC Scientist's Luncheon speaker, Dr. David Dzombak. This luncheon speaker is invited to discuss a topic of relevance to the practice and application of research. Dr. Dzombak has chosen to discuss the timely issue of water risk in the context of demand based on his many years of research.

Join your fellow scientists and practitioners for this exciting opportunity to connect with each other and hear from one of the brightest minds in the water sector.

Dr. Dzombak's Abstract

Regions of the United States face varying levels of risk related to water supply in comparison to water demand. Interbasin transfers have been implemented over time in part to address this water risk. In this talk I will present the results of a recent inventory of existing interbasin transfers (IBTs) in the U.S. and an analysis of why and when they were built. To provide a framework for assessment of potential future pressure for IBTs, a county-level U.S. Water Risk Index (WRI) was developed using various criteria including change in demand, use of groundwater, and proportion of surface water supply used. The analysis accounted for natural importation of water between counties but did not include IBTs. I will present results of this analysis with and will discuss some of the highest risk counties and regions. The WRI analysis and IBT inventory are potentially useful to help identify solutions for mitigating risks to water supplies.

Register online now at
https://weftec.org/attend/register/about-registration/