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Summer 2017 | Volume 53, Number 3

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Excellence in Environmental Engineering & Science Awards Luncheon & Conference

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Summer 2017 | Volume 53, Number 3

FEATURES

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The American Academy of Environmental Engineers and Scientists®

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PRESIDENT'S PAGE

Robert C. Williams, P.E., BCEE

To Our Volunteers - A Note of Gratitude

Volunteering. There are many definitions of volunteering, and there is not a lot of agreement on the term. Perhaps that is because we all have a different notion of a volunteer. A definition that I particularly like is: "to choose to act in recognition of a need, to accept a social responsibility, giving of time, effort, and talent without profiting monetarily." A volunteer, then, is someone who donates of their time or efforts for a cause or organization without being paid.

Americans love to volunteer; it is intrinsic to our culture and way of life. Indeed, volunteering is so pervasive in the Nation, that it can be observed daily in almost every facet of life. We volunteer for Habitat for Humanity, Red Cross, Wounded Warrior Project, home owner associations, libraries, political groups, senior centers, hospitals, the list seems endless. And there are many reasons for volunteering, though each of us has our own. Research into why we volunteer has noted some common, maybe overarching, reasons:

1. **Volunteers live longer and are healthier.** Volunteers are happier and healthier than non-volunteers. In fact, for the elder of us, volunteering is even more beneficial for one's health than exercising and eating well!
2. **Volunteering makes real connections.** Lifelong friendships are kindled through volunteer activities.
3. **Volunteering is good for your career.** People who volunteer make more money, partially because the relationships people create while volunteering can be leveraged for financial benefit. This is particularly noted for volunteers in their career profession or industry.
4. **Volunteering is good for society.** For example, most professional organizations are successful only if they maintain a strong volunteer workforce.
5. **Volunteering makes a difference.** The very nature of volunteering means choosing to work without being paid for it. As a result, people choose to spend their time and efforts on issues they feel strongly about. Thus, volunteering provides a sense of purpose.

AAEES VOLUNTEERS

These are some of the same reasons that engineers and scientists donate their time and efforts to the American Academy of Environmental Engineers and Scientists. Truth be known, AAEES depends on hundreds of volunteers to staff committees and workgroups. Professional organizations couldn't exist without volunteer efforts, and this Academy is no different. Our volunteers donate hundreds of hours of their time and effort to establish and update certification exams, to recruit new members, to serve as State Representatives, to judge the Excellence in Environmental Engineering and Science Competition, to serve on Certification Boards or the Board of Trustees, to review Certification Applications, to provide education opportunities for students and graduates, to identify prominent individuals to be certified through Eminence, and to review nominations for the AAEES Awards. All of these ways for volunteers to support the Academy, so much so that we sometimes grow complacent - we forget the importance of volunteers. And because volunteering is so pervasive in our society and definitely in our Academy, it often goes unrecognized.

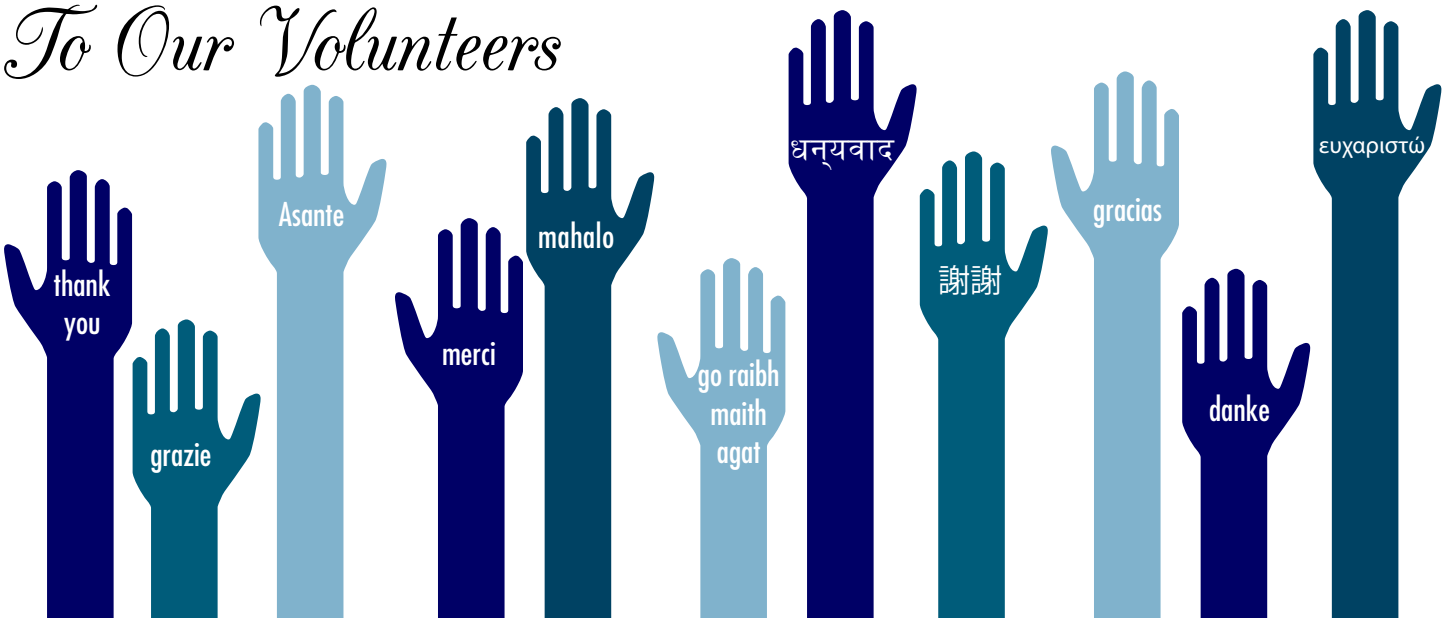
TODAY WE RECOGNIZE YOU, OUR MANY, MANY AAEES VOLUNTEERS

We offer this note of sincere gratitude and we applaud you. We marvel at your countless hours of effort and dedication. We know we wouldn't be the Academy we are without each of you. Saying "Thank you" doesn't seem like enough, but please know that you are greatly appreciated throughout the year by the Board of Trustees, Academy Staff, and indeed the entire Academy. Winston Churchill perhaps said it best, "We make a living by what we get, but we make a life by what we give." **Thank you volunteers for all you give to us.**

ABET ACCREDITATION

There is another way this Academy volunteers for the good of the profession. Many of our members are familiar with the Accreditation Board for Engineering and Technology, Inc. (ABET), or at least may have been years ago as engineering students. ABET is a nonprofit, non-governmental organization recognized by the Council for Higher Education Accreditation. They began as the educational standard against which profes-

To Our Volunteers



sional engineers in the United States were held for licensure. Today, after more than 80 years, ABET standards continue to play this fundamental role and have become the basis of quality for over 40 disciplines all over the world. ABET accredits college and university programs in the disciplines of applied science, computing, engineering and engineering technology at the associate, bachelor and master degree levels. With ABET accreditation, students, employers and our society can be confident that a program meets the quality standards that produce graduates prepared to enter a global workforce.

SO WHERE DOES AAEES VOLUNTEERING COME IN?

AAEES is the Lead Member Society for Environmental Engineering Accreditation (and just became the LMS for Environmental Science, as well). As the Lead Member Society, AAEES helps to fund ABET activities (principally environmental engineering accreditation), provides an expert base to conduct the hands-on work of accreditation, and is focused on improving quality of education for future members of the Academy. AAEES volunteers serve on the ABET Engineering Accreditation Commission responsible for reviewing educational programs and making the final accreditation decisions for each program. They also serve on the ABET Board of Delegates. Most of the AAEES volunteer efforts are concentrated as Program Evaluators, who visit university and college programs and undertake the rigorous accreditation evaluations. As you can see, AAEES volunteers and AAEES monetary support are an integral part of environmental engineering education (and soon to be, environmental science education).

> “As you can see, AAEES volunteers and AAEES monetary support are an integral part of environmental engineering education (and soon to be, environmental science education).

SO WHY IS ABET IMPORTANT?

ABET accreditation is proof that a collegiate program has met standards essential to produce graduates ready to enter the critical fields of applied science, computing, engineering, and engineering technology. Students can have confidence in their education knowing that ABET accreditation is the trusted standard for employers worldwide. For Academic Institutions, ABET accreditation demonstrates their commitment to delivering quality education. And Employers can trust that graduates of ABET-accredited programs are prepared to enter the workforce, capable of leading the way in innovation, emerging technologies, and in anticipating the welfare and safety needs of the public. Finally, in general, engineering licensing boards require Professional Engineer candidates to have an EAC/ABET-accredited bachelor’s degree. Regardless of engineering discipline, graduating from an ABET-accredited program makes it easier for graduates to eventually become licensed as a Professional Engineer.

Thanks in large part to the members of AAEES, both through dues contributions and volunteer time and effort, the quality of environmental engineering education continues to be strong. Personally, I feel a little bit better about my dues knowing that some of the money is supporting quality environmental engineering education.

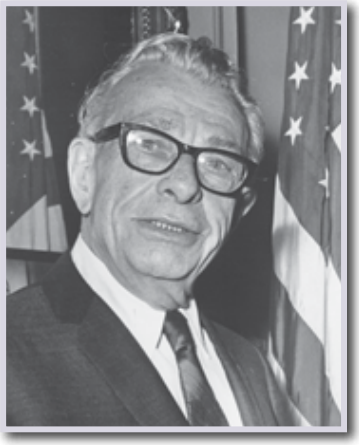
Next time you talk with a BCEE, BCEEM, BCES or AAEES Member, thank them for their volunteer efforts. We in the Academy have much to be proud of and this editorial provides just two of many examples of how the Academy leads the way.

EXECUTIVE DIRECTOR'S PAGE

Burk Kalweit

A Billion Here, A Billion There, Pretty Soon You're Talking Real Money

In this article, we want to take a look at the Trump administration's proposal for spending $1 trillion on infrastructure in the United States. If you're like me, you have to be at least a little bit curious as to what it really means when you start talking about spending $1 trillion for anything.



But let's start at the beginning. The quote that appears at the head of this article is attributed to Sen. Everett McKinley Dirksen of the great state of Illinois, a man known for his loquacious nature. He was also known for his tireless campaign to make the Marigold the national flower of the United States. It was an idea that, unfortunately, failed to take root.

But getting back to our headline quote, a bit of digging reveals that the attribution was erroneous. Dirksen himself offered that, "I never said that. A newspaper fella misquoted me once, and I thought it sounded so good that I never bothered to deny it."

The important part, however, is that the statement was made by someone and, in the parlance of the modern media, was 're-tweeted' often enough that it became an element of contemporary political/fiscal discourse. We have to imagine that this saying also became popular because it bears such a striking resemblance to the truth.

So back to square one - our investigation of what $1 trillion looks like and how much impact spending $1 trillion has on the larger economic backdrop. Let's start with the basics.

- The US economy, as measured by our gross domestic product, stands at just a little over $19 trillion annually.
- The US federal government - leaving out state and local government activities - has an expenditure budget of $4.15 trillion.
- It is important to note that this is an expenditure budget because the federal government has consistently run a deficit since the late 1940s. So the description here has to match up the expenditure budget with the federal government's receipts. Doing this reveals that we presently have federal spending at 22% of GDP, with federal receipts at 19%. That leaves a net deficit of 3% of GDP. Translated into dollars, that works out to roughly $1.2 trillion.
- The fact that the federal government has been borrowing to cover these deficits is reflected in our national debt, which is currently 105% of GDP. The interest on that debt adds up to an annual total of around $430 billion.

What is clear is that there are a lot of dollars sloshing around inside the federal accounts. Unless you are a student of the budget and the budget processes, which I admit I am not, it's pretty easy to get more than slightly confused as to what exactly is going on with the funds being sent to Washington by us, the beleaguered tax payers. At the highest levels, we have officials who are tossing about billions as if they are inconsequential. On the other hand, we have the direct experience of those working on federally funded projects where every dollar is stretched to the max and cost overruns are anathema. The universal truth appears to be that no matter how much money is available, there is never quite enough to cover the competing demands of the businesses and other organizations that rely on the federal budget for their livelihood.

But I am leading you astray. The point here is to examine the Trump infrastructure proposal to see what impact it will have on our community of environmental engineers and scientists. As you might suspect, the news here is decidedly confused. The thing that is mentioned in passing, in very muted tones, by people in the administration is that the infrastructure

proposal that's on the table at this time is for a program that works out to a total of $200 billion provided over the next 10 years. Yes, that is a far cry from the trillion dollars we have been told was one of the featured economic campaign promises.

The $800 billion difference between the $200 billion and $1 trillion is scheduled to be made up by private sector investment. That vision of the future is one in which there are tolls for everything and the operators of these new or improved facilities are free to engage in very aggressive pricing structures to maximize their return on investment.

Did you know that June 5-9 was declared by the Trump administration to be infrastructure week? There was an interesting observation made at an 'infrastructure day' session held in Ohio. The person making the comment noted that there were many presentations and good ideas related to our infrastructure defined in the classical way, that being: roads, rails, bridges, waterways, and airways. The observation was simple and direct. Paraphrasing the comment: "While there is much talk about infrastructure that will enable us to get over the water, or float on the water in engineered waterways, we seem to be missing the point that the water itself must be considered to be part of the infrastructure."

Did someone mention competing interests? The ASCE reported, in its annual update on the state of the nation's infra-

> "Can anyone really come to grips with understanding how big a trillion dollars is?

structure in the context of bridges needing to be upgraded, that a reasonable budget for getting this done would be about $20 billion a year for the next 20 years. So there goes half of the trillion dollar Trump infrastructure package. The unfortunate part is that everything else needs upgrading and refurbishing, too.

As we all know, that does not come cheap. The average cost of resurfacing a four-lane highway is roughly $1.25 million per mile. Total paved roads in the United States stand at about two and a half million miles. Do the math and you see we need over $3 trillion to repave the nation's roadways. Even if it's only a third of that amount, this project alone becomes a budget buster; consuming all of the administration's infrastructure spending -- both private and public sector investment.

The unanswered question is what does the Trump administration have in mind for the environmental infrastructure? There was one Presidential address given at what was more like a campaign event than a detailed infrastructure program announcement. There was much talk about the trillion dollar investment and the critical need to begin the process of addressing the results of too much deferred maintenance. More detail was promised in the 'very near future.'

For what it's worth, Infrastructure Week had the misfortune of being timed coincidentally with the congressional hearings on the firing of James Comey. That was very hard to compete with as there's a lot more drama in congressional hearings dealing with the Russian influence on the US election than there is in 'Wonkish' discussions about proposals for rebuilding our crumbling infrastructure.

As we have seen in the text above, the numbers we're dealing with here are somewhere between unfathomable and Monopoly money. Can anyone really come to grips with understanding how big a trillion dollars is? Bear with me while I walk through an example that might help. I want to use the All-American Standard for measuring value, the McDonald's Big Mac, to help us understand how big $1 trillion really is.

If you have a trillion dollars, you can buy 250 billion Big Macs - assuming they are $4 apiece. Further assuming that a Big Mac is around 3 inches in diameter, it takes 253,440 Big Macs laid out side-by-side to go 1 mile. The straight line 'crow flies' distance between LA and New York is 2,451 miles. That means that it takes 51,765,000 Big Macs to go from coast-to-coast. But wait -- how many Big Macs did we buy with our trillion dollars? That's right, 250 billion of them. So if we're going to add these Big Macs to the landscape, what is it going

Donald Gorske, Fond du Lac, Wisconsin. Record holder of having eaten the most Big Macs. *Guinness World Records*

to look like? Well, we only used about 51 million of our 250 billion burgers for covering the distance once. We have to do a little more math to see what more we can do. Actually, we should have plenty of Big Macs available to build a nice wall. And in fact we do - we have 249,949,000,000 left after our first coast-to-coast crossing.

So what does our wall look like? Well, the size of our wall depends on how we array our boxes of Big Macs. And if we stack them one on top of the other, we end up with a wall that is 4,830 Big Macs high. That's a little unwieldy so we need to think about widening the base. But to make a dent in that height calculation, the base ends up getting very wide. Running through the options, a realistic scenario is one in which the base is 80 boxes deep and 60 boxes high. Put into standard measurement dimensions, we end up with a wall that is 240 inches deep and 150 inches high. So we are getting down to the final translation of what $1 trillion can buy. The answer is a wall from New York to Los Angeles, made up of Big Macs in their boxes, and that is 20 feet thick and 12 and a half feet high. Not quite the Great Wall of China, but hopefully somewhat tastier. And also a useful indicator for how big a trillion is. If we only had $1 billion worth of Big Macs, our wall would only have five boxes to work with. Obviously nowhere near as impressive as the trillion dollar wall.

While our example may seem a little trite, sometimes the easiest way to grasp these really unfathomable numbers is to do something a little trite. The fact of the matter is, that when we hear about the intent to spend a trillion dollars on infrastructure, it sounds like there is a great opportunity in the offing for the organizations whose business is building and running infrastructure. However, when we start matching up the proposed supply of funding with the well-documented backlog of projects needing funding, the opportunity turns sour in a hurry. To succeed in this environment, we are going to have to get very good at prioritizing. And we're going to have to get very good at squeezing value out of every nickel.

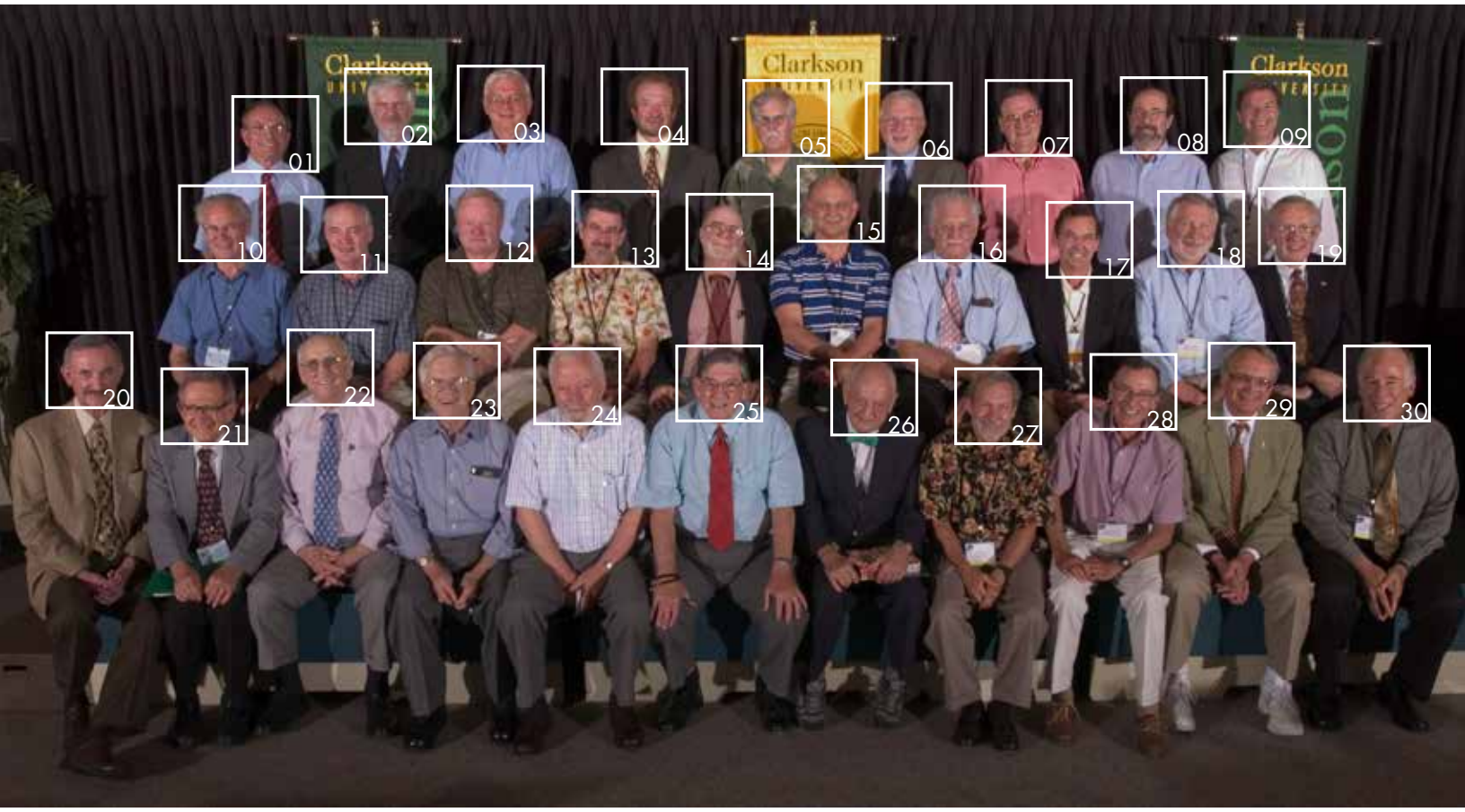
> “One thing we can count on, even with the recognition of the infrastructure problem, is that there is little room for optimism on finding the funding that will be required to begin the restoration.

On top of that, the big question is whether or not we have the talent it will take to bolster the capabilities of the environmental industry through innovation in technology and systems. Sustainability has to be the watchword, and it has to play a critical role in whatever solutions are developed for whichever part of the infrastructure we are evaluating and working in.

Some analysts of the industry have been wondering whether, just as we have been under-investing in maintaining our physical environmental infrastructure, have we also been falling behind in developing and nurturing the talent that will be needed to face these challenges. We know that one immediate concern is the acceleration of the retirement of the baby boom generation. The jury is still out on this particular problem, but there are indications that more people are pursuing environmental careers now than has been the case for decades. Data showing the number of degrees conferred in environmental engineering have steadily increased to where data for the most recent year available stands at roughly 2 1/2 times the number of graduates 15 years ago. Other sources of data indicate that enrollments in environmental curricula are continuing this steady increase.

One thing we can count on, even with the recognition of the infrastructure problem, is that there is little room for optimism on finding the funding that will be required to begin the restoration. That means getting the job done will be a test of our perseverance and our ingenuity. We know that the work will get done because it has to get done. And in that context, our cadre of environmental specialists may need to develop yet another specialty certification that goes with the territory. Expertise in financial engineering may become the incremental talent of choice going forward. The watchword may become something like a customer stating, 'I know what I want and I only have 80% of the money I need to get it done. Mr. Expert Environmental Engineer/Scientist, can you help me figure out how to make the magic happen?' Based on conversations I've had with the Academy's members, this scenario isn't entirely new. What's different this time is that the funding environment is as difficult as it has ever been, with no improvement expected despite the promise of support from Washington.

Nobody said it was going to be easy!



Legacy Photo

Dr. Tim Shea, P.E., BCEE, provided the above photo. The photo of "Legacies" was taken at the AEESP Meeting, Clarkson University, Summer 2005. "I treasure this photo because it has a lot of the early pioneers in our field, not counting a few then younger ones like yours truly?" stated Dr. Shea. How many of these pioneers can you name? Here's a hint for number one - his first name is Tim

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ACADEMY NEWS

SPECIALTY CERTIFICATION RENEWAL FOR 2018

The 2018 Specialty Certification Renewal cycle will soon be underway. Notices and instructions will be emailed beginning in September. Log in to your account on the AAEES Center to view your contact information and to verify that your records are up-to-date.

The specialty certification issued by the Academy must be renewed by December 31. Renewals not completed by March 31 are considered expired. If you still have not renewed for 2017 you may log in to the AAEES Center to renew your certification. If you are delinquent for previous years, email Joyce at JDowen@aaees.org to learn how your certification can be reinstated.

UPCOMING WEBINARS

AAEES is holding a series of webinars featuring winners of the Excellence in Environmental Engineering and Science awards competition. Below is the current list of the upcoming webinars. The schedule is subject to change. For registration and up to date information, go to http://www.aaees.org.

- **August 15, 2017** - Physics-Based Management Optimization (PBMO™) Technology Presentation
- **August 30, 2017** - Regional Water Recycling Plant No. 5 Battery Storage: Parts 2 and 3
- **September 14, 2017** - Novel and Advanced Hybrid Oxidation and Enzymatic Technologies for Emerging Trace Environmental Contaminants
- **September 27, 2017** - The Evolution of STAR from Laboratory Concept to Full-Scale *In Situ* Implementation
- **October 25, 2017** - Groundwater Replenishment Improvement Project (GRIP)
- **November 14, 2017** - Innovative Approach for Implementing Performance-Based Remediation at Fort Ord

2018 Election Results

The 2018 Election Teller's Committee convened at Academy Headquarters on June 28 to tabulate the votes for the 2018 Election. The results were so close, that the committee opted to have an immediate re-count to verify that the results are accurate!

The following individuals have been elected for 2017:

- President-Elect **C. Hunter Nolen** will be President
- **Kristin (Kris) Morico** will be President-Elect
- **James W. Patterson** will be Vice President
- **James D. Fitzgerald** and **David A. Vaccari** have been elected as Trustees-at-Large


C. Hunter Nolen


Kristin (Kris) Morico


James W. Patterson


James D. Fitzgerald


David A. Vaccari


Richard P. Watson

Confirmation of the results will take place at the 2017 Annual Meeting in October. Official terms start January 1, 2018.

James Patterson, who still has one more year to serve as Trustee-at-Large, will vacate the position when he takes office as Vice President on January 1, 2018. **Richard P. Watson** received the third most votes in the election and will assume that role for a one-year term. Mr. Watson will then be eligible to run again for a three-year term.

AAEES thanks the 2018 Election Teller's Committee for taking the time to tabulate the votes:

- **Edward P. Hagarty**, D.Sc., P.E., BCEE
- **Sarah T. Koser**, PWS, BCES
- **Thomas G. Sprehe**, P.E., BCEE

ADDITIONAL ACTIVITIES

- **October 2, 2017** - AAEES Breakfast at WEFTEC. All are invited! This year's breakfast is at 7:00 am at the McCormick Place, Chicago, Illinois. The Keynote Speaker is Dr. Krishna Pagilla P.E., BCEE, Professor and Environmental Engineering Program Director at the University of Nevada, Reno. Dr. Pagilla is an expert and internationally-known leader in the fields of water quality, water resource recovery, water reuse, and environmental biotechnology. Details of his speech to follow. Earn one Academy PDH for attending. Go to http:/www.weftec.org to register.
- **September 30 - October 4, 2017** - WEFTEC - AAEES will be exhibiting again at Booth 6534.
- **October 12, 2017**, Southern California Annual Event at the Orange County Sanitation District. This year's topic will be Indirect and Direct Potable Reuse and will focus on Are We Ready for DPR. For information, contact Sharon Yin at syin@ocsd.com.
- **October 12, 2017**, Environmental Symposium, Hampton Inn & Suites, Cazenovia, New York. There will be six one-hour speeches. It will be a one day environmental symposium with a balance between environmental science and engineering issues with focus on emerging issues. For information, contact Howard LaFever at howard.lafever@ghd.com.
- **October 19, 2017**, AAEES Technical Conference: Protecting Our Precious Resource – Texas Water, San Antonio Marriott Riverwalk, San Antonio, Texas. The American Academy of Environmental Engineers & Scientists (AAEES) will be hosting a one-day technical conference in San Antonio, Texas in conjunction with the Academy's Board of Trustees Meeting the following day. The selected speakers represent the "Best of the Best" professionals. Registration TBA.

MEMBER NEWS

IN MEMORIAM

CHARLES H.F. BLUMELING, III, P.E., BCEE

Charles H.F. Blumeling, III, of Bergenfield, passed away Monday, January 2, 2017.

A loving husband of Carol E. Blumeling, father of Charles IV, Gary, Katherine and Glen. Grandfather of Alison Zahn, Charles V, Christopher and Craig Blumeling, his loving in-laws, John, Karen, Ammie and many nieces and nephews. He was predeceased by his wife, Carol, his parents Charles and Gladys, his granddaughter Cynthia and sisters Denise and Leslie.

Charles grew up in Bergenfield and graduated from Bergenfield High School in 1953. Then attended Newark College of Engineering and graduated in 1960 with a Bachelor of Science in Civil Engineering and was a brother in the Tau Delta Phi Fraternity. He went on to further his education and received his Master's in 1970.

After marriage he spent his early days in Lebanon, NJ at the Round Valley Reservoir Project. After completion of the project he moved the family to Bergenfield. For many years he worked as a Director of Engineering for the City of Newark. A lifelong member of the South Presbyterian Church, in Bergenfield and participated in many church groups and activities. He was a proud Eagle Scout since 1950.

Charles had many passions for which he was proud of. His love of sailing would bring him to be part of the Palisade Power Squadron and a member of the Hook Mountain Yacht Club. He taught classes at Rutgers and was a consultant for multiple municipalities.

Mr. Blumeling was a Life Member and had been a Board Certified Environmental Engineer in Sanitary Engineering since 1969.

Published in The Record on January 4, 2017

EUGENE "SKIP" A. BRACKBILL, P.E., BCEE

Eugene "Skip" A. Brackbill, 68, of Chesterfield, Virginia, passed away on July 1, 2016. He had recently retired to the Richmond area from East Hampton, Connecticut. The son of the late Arthur H. Brackbill and Elaine Charlton Brackbill, he was born in Lancaster, Pennsylvania.

He is survived by his wife Christine (Spencer) Brackbill; daughter, Emelia C. Brackbill; brother, Kenneth C. Brackbill (Greta); cousin, Phyllis N. Miller; sister-in-law, Linda S. Folger; and several nieces and nephews.

Skip graduated from McCaskey High School and received a Bachelor of Mechanical Engineering Degree in Civil Engineering from the University of Cincinnati. He served in the U.S. Army, attaining the rank of 1st Lieutenant, and was awarded the Bronze Star medal for service in Vietnam. Skip commenced his engineering career in the Central Engineering Department of Armstrong World Industries. Following Armstrong he worked with a number of environmental consulting companies, subsequently co-founding Sci-Tech, Inc., in Wethersfield, Connecticut, which provided environmental consulting and engineering services for many years. Following Skip's retirement in 2012, he continued to work in the industrial air pollution control field.

Mr. Brackbill was a Life Member and had been a Board Certified Environmental Engineer in Air Pollution Control since 1980.

Published in Lancaster Online on July 3, 2016.

WARREN HUNTINGTON "TOBY" SPURGE II, P.E., BCEE

Warren "Toby" Huntington Spurge, II, of Juno Isles, passed away November 29, 2016 at home where he lived with the love of his life, Sue, who he had known since the age of 12. Born September 19, 1946 and adopted by Dr. Warren Spurge and Rosalind Lyon Spurge.

He established Spurge & Associates Inc. a successful engineering firm in Palm Beach Gardens in 1983. He was presently Vice President of Engineering with George F. Young, Inc. for the last 25 years.

He graduated from Tulane University with a master's degree in Civil Environmental Engineering. He was a captain in the Army and was an avid golfer, boater and a triathlete.

He was predeceased by his son Wesley Spurge and his sister Muffie Spurge. He is survived by his wife Sue; daughter Amie (Adam) Breidenbaugh of Jupiter; son Warren (Jill) H. Spurge III of North Palm Beach; sister Wendy (John) Abraham of Orlando; step-mother Annie Spurge of Sarasota; five grandchildren, Robby, Luke, Lance, Emily Sue Breidenbaugh and Colin Spurge.

Mr. Spurge was a Life Member and had been a Board Certified Environmental Engineer in Water Supply and Wastewater Engineering since 1988.

Published in The Palm Beach Post from December 4 to December 5, 2016.

Start Planning Now

Environmental Communications Award

Your organization has been especially successful in communicating complex and challenging issues to the public and other important audiences. Through your efforts, citizens, environmental conservation groups, town councils, state and national legislative bodies, private sector companies, and others have come to realize the value and importance of your projects, and their economic and public health benefits. If that sounds familiar to you, get the recognition you deserve by entering the AAEES Environmental Communications Award competition. Winning entries are automatically qualified to enter the International Water Association's PIA Awards in the category of Marketing and Communications.

Here are the criteria for judging the Environmental Communications Award:

Innovative approach to messaging or branding
- Future value to the water engineering profession
- Creativity and clarity in portraying and communicating the messages
- Effectiveness in delivery and achieving desired outcome
- Integrated Design Approach

This Award is designed to recognize environmental communication efforts by industrial entities; municipal, state and federal governments; and consulting firms who work to convey the important environmental messages to their constituencies and other interested parties.

The deadline for entries is March 1, 2018.

Entry guidelines, submission forms, and previous winning entries available at http://www.aaees.org. Click on Awards and Competitions.

AMERICAN ACADEMY
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- **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.

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The 47th Annual Excellence in Environmental Engineering and Science Awards Luncheon and Conference

by Yolanda Moulden

AAEES's premier event, the Annual Excellence in Environmental Engineering and Science Awards Luncheon and Conference, was held at the prestigious National Press Club in Washington, D.C. In it's 47th year, this all-day event was held on April 13, 2017, to honor and celebrate environmental engineering and science professionals in academia, firms, and government agencies, and students making an impact on the profession.

The format of the event was modified from previous years. Instead of the full slate of technical sessions presented by winners of the Excellence in Environmental Engineering and Science (E3S) awards competition, AAEES invited guest speakers providing their perspectives on the business and technology in the environmental industry.

Presentations of the E3S award winners are being featured in a series of webinars. For more information and an updated schedule, go to http://www.aaees.org.

The conference was hosted by 2017 President-Elect C. Hunter Nolen, P.E., BCEE.

The first speaker was Ann Massey, President of Environmental & Infrastructure, Amec Foster Wheeler, Inc. In her presentation, *The Environmental Business Outlook - The Amec Perspective*, Ms. Massey shared her perspective on the current state of the environmental engineering and science industry and marketplace; trends in customer needs and expectations; advancements in services, technologies, and delivery methods; changing employment conditions, and other observations as a senior executive in the industry.

Dr. Danny Reible, P.E., BCEE, NAE, Donovan Maddox Distinguished Engineering Chair for Environmental and Water Resources, Department of Civil, Environmental and Construction Engineering, Texas Tech University and 2017 AAEES Kappe Lecture was the second speaker. In his presentation, *Where are the Breakthrough Technologies - How We Go From Test Bench to Utility-Scale Implementation,* Dr. Reible focused on the academic sector's work to develop new technologies that will lead to better, sustainable solutions for creating an environment that will be able to address the needs of a global population exceeding 7 billion.

The final conference speaker was AAEES Vice President, Kristin Morico, P.E., BCEE, CSP, F.ASCE, Global Leader-Environmental Programs, GE Global Operations, Environment, Health, and Safety. Her presentation, *Environmental Engineering - An Industrial Sector Perspective: A Look Back to Get a Glimpse of the Future*, focused on discerning where we are going by looking at "proactive" strategies such as predictive analytics, the use of technologies like robotics, drones, and others to safely assess and address environmental risks in the context of sustainable solutions.

THE AAEES AWARDS

David Gaddis, PE., BCEE, Chair of the Excellence in Environmental Engineering and Science Awards Committee, served as the Master of Ceremonies. Before the presentation of the awards, AAEES President Robert Williams welcomed the Keynote Speaker, Dr. Kevin Teichman.

Dr. Kevin Teichman is the Senior Science Advisor in the Office of Research and Development (ORD) at the U.S. Environmental Protection Agency. In his presentation, *If You Were the EPA Administrator*, Dr. Teichman shared how the research results of EPA's Office of Research and Development continue to contribute to the environmental risk management decisions made by government entities, industry, and others. Following Dr. Teichman was the presentation of the awards.

The Honorees

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

Two individuals were selected as recipients of the 2017 International Honorary Award. Dr. James Mihelcic did the honor of presenting this award to Dr. Marcos von Sperling, Full Professor at the Department of Sanitary and Environmental Engineering of the Federal University of Minas


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1. The audience looks on as Keynote Speaker, Dr. Kevin Teichman, takes the podium
2. Master of Ceremonies, David Gaddis
3. President-Elect Hunter Nolen and 2017 Excellence in Environmental Engineering and Science Education Award Recipient, James Mihelcic
4. 2017 AAEES President Robert Williams and 2016 AAEES Past President Howard B. LaFever

Gerais, Brazil. Unfortunately, the second recipient, Dr. Eran Friedler, Associate Professor in the Faculty of Civil and Environmental Engineering in the Technion – Israel Institute of Technology, was unable to attend this year's event.

President-Elect Hunter Nolen presented the 2017 Honorary Member Award to George Hawkins, Chief Executive Officer of DC Water.

James Mihelcic returned to the podium, this time as a recipient, as he was presented with the 2017 Excellence in Environmental Engineering Education and Science Award by Hunter Nolen. The Excellence in Environmental Engineering and Science Education Award was sponsored by GHD, Trussell Technologies, and Innovyze.

The 2017 Innovyze Excellence in Computational Hydraulics/Hydrology Award, sponsored by Innovyze, was presented by 2016 President, Howard B. LaFever to Qian Zhang, Ph.D. Dr. Zhang is watershed data analyst (assistant research scientist) with the University of Maryland Center for Environmental Science at the US Environmental Protection Agency's Chesapeake Bay Program. He obtained his PhD from the Department of Geography and Environmental Engineering at Johns Hopkins University under the advisement of Professor William Ball, Ph.D.

Returning, yet again, to the podium as a presenter was James Mihelcic who presented the Edward J. Cleary Award to Dr. Sudhir Murthy, Innovations Chief for DC Water.

1. Dr. Danny Reible presenting at morning conference
2. Robert Williams presenting Varut "Dua" Guvanasen, Peter Huyakorn, and Larry Deschaine with HydroGeoLogic Inc.'s Grand Prize Award in Research
3. Presentation of Superior Achievement in Environmental Engineering and Science to representatives of Savron, Geosyntec, and Dupont: David Liefl, Gavin Grant, Luana Jo, Scott Drew, Grant Scholes, Len deVlaming, John Vidumsky, and David Major
4. Chris Berch, Jasmin Hall, Jesse Pompa, and Steven Elie of Inland Empire Utilities Agency. Regional Water Recycling Plan No. 5 Battery Storage won Grand Prize in Planning, Operations/Management, and Environmental Sustainability

The final individual award was the Gordon Maskew Fair Award. Presenting it was AAEES President Robert Williams to the 2017 recipient, Stephen J. Hickox, P.E., BCEE, Chairman and CEO of CDM Smith.

EXCELLENCE IN ENVIRONMENTAL ENGINEERING AND SCIENCE AWARDS

This year's Excellence in Environmental Engineering and Science Awards was a history-making event. A single project won Grand Prize in three separate categories and, for the first time, an entrant in the Industrial Waste Practice won the Superior Achievement Award.

The Academy launched the Excellence in Environmental Engineering in 1989 (renamed in 2014 to Excellence in Environmental Engineering and Science) competition to identify the best environmental engineering and science projects in the world.

All entries were judged by an independent panel of experts. The judges' independent evaluations of how well each project addressed the program's five criteria are totaled to determine the winners. One Grand Prize is awarded in each category to the highest scoring entry. Other high scoring entries in each category are granted Honor Awards. The highest scoring entry, regardless of category, receives the Academy's Superior Achievement Award for Excellence in Environmental Engineering and Science. Following is a list of this year's winners.


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1. First Place winners in the Student Video Competition: The University of South Florida, Laura Rodriguez-Gonzalez, Emma Lopez, Kevin Orner, Faculty Advisor Dr. James Mihelcic, Meng Wang, Philip Dixon, and Charlotte Haberstroh
2. DC Water's George Hawkins, 2017 Honorary Member Award recipient
3. AAEES Vice Preisdent Kris Morico address audience at morning conference as President-Elect Hunter Nolen looks on
4. IEUA's Kathryn Besser, Jasmin Hall, Steven Elie, Jesse Pompa, and Chris Berch presented with Grand Prize in Environmental Sustainability by Robert Williams

Research

There were two winning projects in the Research category. They were:

- **Honor Award:** Sanitation Districts of Los Angeles County for *Biotrickling Filter for Digester Gas Hydrogen Sulfide Control at the JWPCP* (Whitter, California). Engineer in Charge was Grace Robinson Hyde, P.E., BCEE. Accepting the award was Robert Morton, P.E., BCEE.
- **Grand Prize:** HydroGeoLogic, Inc. for *Physics-Based Management Optimization Technology for Supporting Environmental and Water Resource Management* (Reston, Virginia). Engineers in Charge were Larry M. Deschaine, Ph.D., P.E., and Varut "Dua" Guvanasen, Ph.D., P.E. Accepting the award were Larry Deschaine, Dua Guvanasen, and Peter Huyakorn.

Planning

There were three winning projects in the Planning category. They were:

- **Honor Award:** CH2M for *Miami-Dade Ocean Outfall Legislation Program* (Countywide, Miami Dade County, Florida). Engineer in Charge was Evelio Agustin, P.E. Accepting the award was Laurens Van Der Tak.

1. Robert Burkhard, Mike Healy, and Scot Shoemaker are presented with the W. Wesley Eckenfelder Industrial Waste Management Medal by AquAeTer President, Michael Corn
2. Robert Williams presents to the Second Place Winners of the Student Video Competition, Florida International University: Ron Hariprashad, Allyson Tombesi, and Sarah Solomon
3. Amec Foster Wheeler's Ann Massey presents at the conference
4. Robert Williams presents Lisa Van Riper with Alexandria Renew Enterprises' Grand Prize in Environmental Communications

- **Honor Award:** Orange County Sanitation Districts for *Biosolids Master Plan* (Fountain Valley, California). Engineer in Charge was Robert C. Thompson.
- **Grand Prize:** Inland Empire Utilities Agency (IEUA) for *Regional Water Recycling Plant No. 5 Battery Storage* (Chino, California). Engineer in Charge was Chris Berch, P.E., BCEE. Accepting the award were Steven Elie and Jasmin Hall.

Design

There were three winning projects in the Design category, including two for Grand Prize. They were:

- **Honor Award:** Greeley and Hansen for *O'Brien WRP Adds Wastewater UV Disinfection System* (Skokie, Illinois). Engineer in Charge was Paul Vogel, P.E. Accepting the award were Arun Mande and Tim Gualandri.
- **Grand Prize:** Carollo Engineers, Inc., for *Robert W. Hite Treatment Facility South Secondary Improvements* (Denver, Colorado). Accepting the award were Engineer in Charge John Fraser, P.E. for Carollo Engineers; and Mitch Costanzo and Sherman Papke for Metro Wastewater Reclamation District.
- **Grand Prize:** Water Replenishment District of Southern California (WRD) for *Groundwater Reliability Improvement Project (GRIP)* (Pico Rivera, California).

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1. CDM Smith's Stephen Hickox, 2017 Gordon Maskew Fair Award recipient
2. HydroGeoLogic, Inc., won Grand Prize awards for two different projects in Research and Small Projects. Pictured are (back row) Jeff Fairbanks, Roy Evans, Larry Deschaine, (front row) Varut Guvanasen, Peter Huyakorn, and Gene Lupia
3. Keynote Speaker, Dr. Kevin Teichman
4. Laurens van der Tak accepted CH2M's Honor Award in Planning.

Engineer in Charge was Robb Whitaker, P.E. Accepting the award were Albert Robles and Ken Ortega.

Operations/Management

There was one award-winning project in the Operations/Management category. This project also won Grand Prize in two other categories:

- **Grand Prize:** Inland Empire Utilities Agency (IEUA) for *Regional Water Recycling Plant No. 5 Battery Storage* (Chino, California). Engineer in Charge was Chris Berch, P.E., BCEE. Accepting the award were Steven Elie and Jasmin Hall.

University Research

There were two winning projects in the University Research category. They were:

- **Honor Award:** North Carolina Research Team: Dr. Joel J. Ducoste, BCEEM, Dr. Francis L. de los Reyes, III, and Dr. Tarek N. Aziz for *Fats, Oils, and Grease (FOG) Waste: Fate and Transport in Interceptors and Sewers, Energy and Recovery Through Anaerobic Co-Digestion* (Raleigh, North Carolina). Accepting the award was Person in Charge Dr. Joel D. Ducoste.
- **Grand Prize:** Institut National de la Recherche Scientifique for *Novel and Advanced Hybrid Oxidation and*


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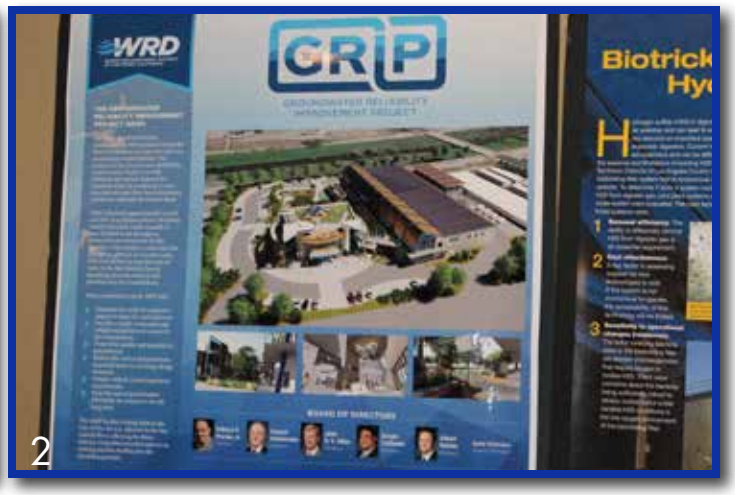

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1. Robert Williams presents Ken Ortega and Albert Robles with Water Replenishment District of Southern California's Grand Prize in Design Award
2. Panels on display for the Poster Session.
3. The Poster Session offered an opportunity for attendees to network.
4. Dr. Santindar Brar with the University Research Grand Prize award

Enzymatic Technologies for Emerging Trace Environmental Contaminants (Quebec, Canada). Engineer in Charge was Dr. Satinder Kaur Brar and Dr. Rao Y. Surampalli, P.E., BCEE. Accepting the award was Dr. Satindar Kaur Brar.

Small Projects

There were two winning projects in the Small Projects category. They were:

- **Honor Award:** City of Scottsdale & GHD, Inc. for S*cottsdale Booster Pump Station 71* (Scottsdale, Arizona). Engineer in Charge was Bill Roberts, P.E., BCEE. Accepting the award was Howard B. LaFever, P.E., BCEE.
- **Grand Prize:** HydroGeoLogic, Inc. for *Innovative Approach for Implementing Performance-Based Remediation Project* (Former Fort Ord, California). Engineer in Charge was Roy Evans, P.E. and Varut "Dua" Guvanasen, Ph.D., P.E. Accepting the award were Roy Evans, Peter Huyakorn, and Dua Guvanasen.

Environmental Sustainability

There were three winning projects in the Environmental Sustainability category. They were:

1. Sze Tiong Tan and Vincent Lim Han display Housing & Development Board of Singapore's Honor Award in Environmental Sustainability
2. CDM Smith won the Grand Prize in Industrial Waste Practice. Pictured with Robert Williams are: Robert Burkard, Scot Shoemaker, and Mike Healy
3. Robert Williams presents the Grand Prize in Small Projects to HydroGeoLogic, Inc.'s Peter Huyakorn, Dua Guvanasen, and Roy Evans.
4. Master of Ceremonies David Gaddis and daughter, Sarah Gaddis.

- **Honor Award:** Housing & Development Board (HDB) Singapore for *A Biophilic MyWaterway@Punggol - Innovative Floating Wetlands and Freshwater-Tolerant Mangroves* (Punggol Eco-Town, Singapore). Engineer in Charge was Mr. Vicent Lim Han. Accepting the award was Sze Tiong Tan.
- **Honor Award:** Orange County Sanitation District/ Orange County Water District for *Groundwater Replenishment System Final Expansion Feasibility Study* (Fountain Valley, California). Engineer in Charge was Rob Thompson, P.E.
- **Grand Prize:** Inland Empire Utilities Agency (IEUA) for *Regional Water Recycling Plant No. 5 Battery Storage* (Chino, California). Engineer in Charge was Chris Berch, P.E., BCEE. Accepting the award were Chris Berch, Steven Elie, Kathryn Besser, Jasmin Hall, and Jesse Pompa.

Industrial Waste Practice

There was one award-winning project in the Industrial Waste Practice category.

- **Grand Prize**: CDM Smith for *El Dorado, AR Thermal Treatment Facility Expansion* (El Dorado, Arkansas). Engineer in Charge was Robert Burkard, P.E., BCEE. Accepting the award were Robert Burkard for CDM

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1. 2017 Innovyze Excellence in Computational Hydraulics/Hydrology Award recipient, Qian Zhang, and Howard B. LaFever
2. The second Grand Prize in Design went to Carollo Engineers, pictured with Robert Williams are Mitch Costanzo, Sherman Papke, and John Fraser
3. Robert Williams presents the Honor Award in Environmental Communications to Ken Ortega and Albert Robles for Water Replenishment District of Southern California's Building Community Support for Reuse
4. Tim Gualandri and Arune Mande display Greeley and Hansen's Honor Award in Design

Smith, and Scot Shoemaker and Michael Healy for Clean Harbors.

The Grand Prize in Industrial Waste Practice is also awarded the **W. Wesley Eckenfelder Industrial Waste Management Medal** sponsored by AquAeTer. Presenting the award to the winning team was Michael R. Corn, P.E., BCEE, President of AquAeTer.

Superior Achievement in Environmental Engineering and Science

The Superior Achievement Award is presented to the project receiving the highest score of all entered projects. The winning project had been entered in Industrial Waste Practice. Congratulations to:

- Savron, A Division of Geosyntec Consultants, Inc., for *The Evolution of STAR from Laboratory Concept to Full-Scale In Situ Implementation* (Newark, New Jersey). Engineer in Charge was Scott Drew, LSRP. Accepting the award were, from Savron: David Major, Gavin Grant, Grant Scholes, and David Liefl; from Geosyntec: Michaye McMaster, Len deVlaming, Luana Jo, Scott Drew; and from Dupont: John Vidumsky.

ENVIRONMENTAL COMMUNICATIONS AWARD

Communicating with the public at large and other constituents can be a complex and challenging issue. Communicating

1. Dr. Joel Ducoste with the Honor Award in University Research
2. Superior Achievement Award Winner, Savron, A Division of Geosyntec Consultants, Inc., David Liefl, Luana Jo, John Vidumsky, Gavin Grant, Len DeVlaming, Michaye McMaster, Grand Scholes, Scott Drew, and David Major
3. James Mihelcic and 2017 International Honorary Award recipient, Marcos von Sperling
4. Robert Williams presents the Student Video Competition First Place award to Philip Dixon, Emma Lopez, Ken Orner, Charlotte Haberstroh, and Laura Rodriguez-Gonzalez

and marketing plans must be designed to address the objectives and strategies of the campaign to reach a target audience.

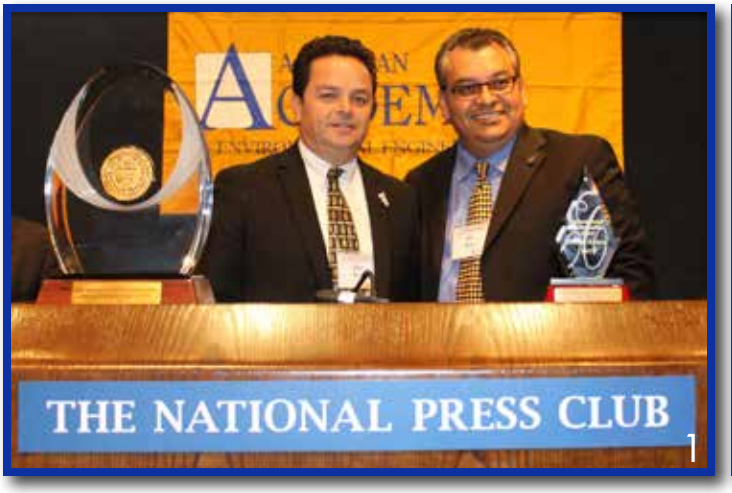
With this in mind and in cooperation with the International Water Association and PIA Awards, AAEES offered a new area of competition in 2012: The Environmental Communications Award. There were two award-winning projects for 2017.

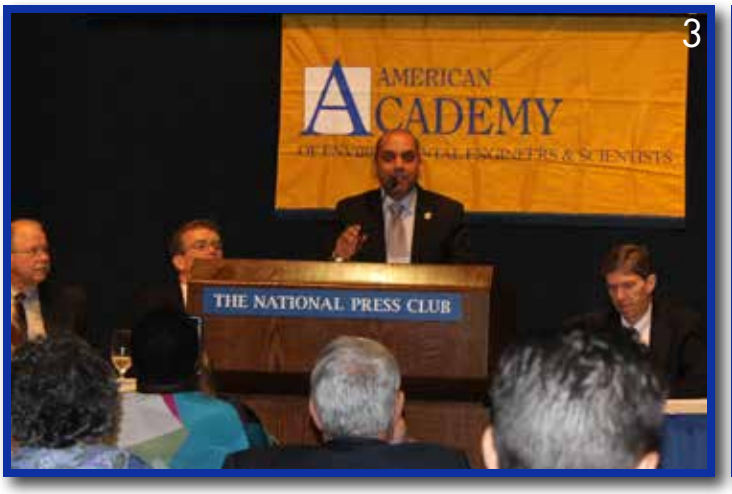
- **Honor Award:** Water Replenishment District of Southern California for *Building Community Support for Water Reuse*. Person in Charge was Pete Brown. Accepting the award were Albert Robles and Ken Ortega.
- **Grand Prize:** Alexandria Renew Enterprises for *Driving Community Engagement with Content at AlexRenew*. Accepting the award was Person in Charge, Lisa Van Riper.

2016 - 2017 EESF/AEESP STUDENT VIDEO COMPETITION

New this year, the 2016 - 2016 EESF/AEESP Student Video Competition. Teams of undergraduates and graduates studying environmental engineering and science were challenged to create 2-3 minute videos on the topic "what can individuals do to help reduce climate change". Each video also addressed the roles of Environmental Engineers and Scientists in solving climate related problems. The winning videos were:

- **Third Place:** University of Southern California for *Small Changes; Big Impact*.





1. Albert Robles and Ken Ortega with Water Replenishment District of Southern California's Grand Prize in Design and Honor Award in Environmental Communications
2. James Mihelcic, 2017 Excellence in Environmental Engineering and Science Education (E4) award recipient, served as award presenter as well as Faculty Advisor for the First Place winners of the Student Video Competition
3. 2017 Edward J. Cleary Award recipient, Dr. Sudhir Murthy
4. Panels on display during Poster Session

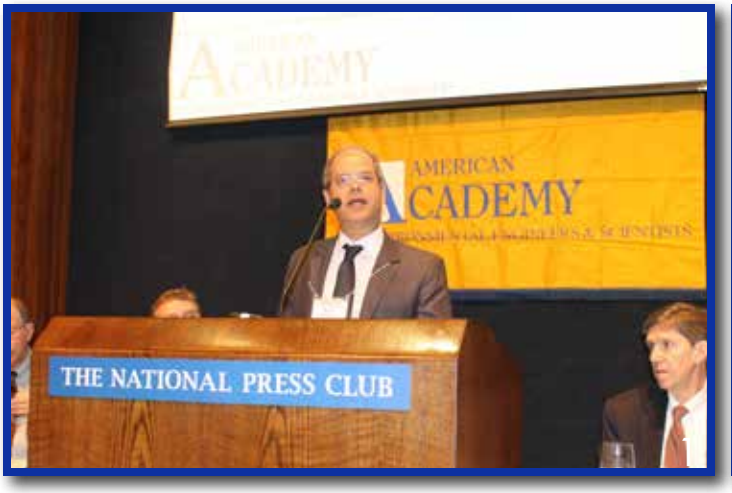
- **Second Place:** Florida International University for *Take Action on Climate Change*. Accepting the award were Team Leader Allyson Tombesi, Sarah Solomon, and Ron Hariprashad.
- **First Place:** The University of South Florida for *Change Climate Change*. Accepting the award were Team Leader Kevin Orner, Philip Dixon, Charlotte Haberstroh, Emma Lopez, Laura Rodriguez-Gonzalez, and Faculty Advisor Dr. James Mihelcic.

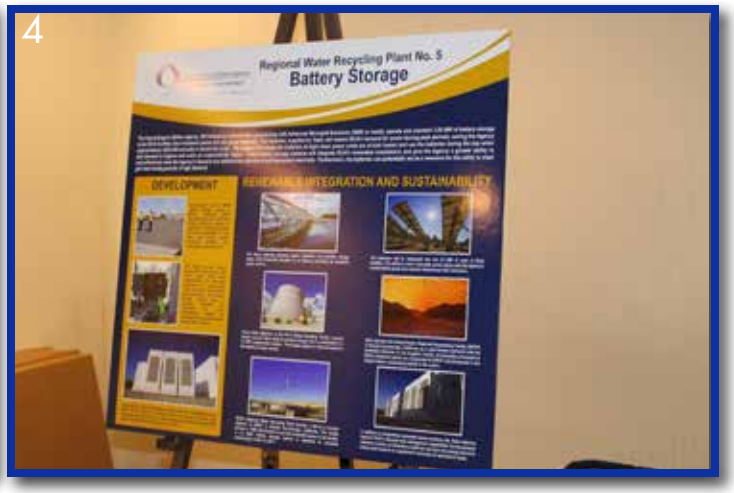
Following the awards luncheon, AAEES held a poster session in which attendees were able to interact with the E3S award winners.

Full profiles of all of the winning projects and award recipients were published in the Spring 2017 (V3, N2) issue of *Environmental Engineer and Scientist*. They are also posted on http://www.aaees.org and http://www.eesfoundation.org.

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 Excellence in Environmental Engineering and Science Awards Luncheon and Conference.

And we would like to offer a special 'thank you' to the organiations and corporations represented on page 29 and our AAEES Patrons on page 2.





1. 2017 International Honorary Award Recipient, Marcos von Sperling
2. Robert Williams presents Robert Morton with Sanitation Districts of Los Angeles County's Honor Award in Research
3. Award line up
4. Panels for Poster Session on display

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