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FEATURES

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PRESIDENT'S PAGE

Howard B. LaFever, P.E., BCEE

Mentoring the Younger Generation – Part 2

By the time you all receive the summer edition of our Journal, summer will be here. It has taken a long time to get here… the weather I mean. We had summer-like weather in March, frost at the end of May (that is why you do not plant sensitive vegetables in the northern part of our country until after Memorial Day – I had to cover my early planting of potatoes), and now unusual cold nights and days in early to mid-June. Hope is in sight with 80°F weather predicted soon and leaves me looking out of my office window again looking at blue sky, green grass, and lots of beautiful trees (and of course my favorite, maple trees).

Before moving on to the main theme for the President's Page, I would like to thank all those involved in making our 46th Annual AAEES Awards and Technical Conference held in the National Press Club in Washington, DC a real success: the winners, the projects, our Excellence in Environmental Engineering and Science Award Committee led by David Gaddis, members of the Board of Trustees, and our wonderful staff of Burk, Sammi, Joyce, Yolanda, Lisa, and Marisa. Bob Williams was an excellent moderator for the Technical Conference where we heard 25-minute presentations from the Grand Prize Winners, and from our Superior Achievement Award Winner (our Trustee and Treasurer Dan Oerther).

Now on to my main theme, which is a continuation from my message in the Spring 2016 issue of *Environmental Engineer & Scientist* – the theme of **mentoring** the younger generation of upcoming environmental engineers and scientists. There are many ways we can do this: (1) personal one-on-one contact; and (2) strengthen and expand the efforts by the Academy's Student and Young Professionals Committee headed and led by our chair, Nick Rose.

PERSONAL ONE-ON-ONE

Over my 45 years at GHD (formerly Stearns & Wheler Engineers & Scientists), I have had numerous high school and college students spend a day job shadowing me or working for the summer or semester breaks. I don't think we realize how much of an impact, positive (mostly) or negative, we have on this future generation. Years later, I have found out from parents or the young career engineers that the brief time I spent with their child was very influential in deciding their career path.

I am especially proud of the recent decision by our granddaughter, Alicia LaFever (valedictorian in her high school class this year), to attend Syracuse University this coming fall majoring in civil and environmental engineering! Maybe Alicia will help start a Student Chapter of the Academy in the next couple of years.

Alicia LaFever

ACADEMY'S STUDENT AND YOUNG PROFESSIONAL COMMITTEE LEADERSHIP

In a recent telecom with our Executive Director Burk, I learned that our Student and Young Professional Committee is actively working on how to improve and expand the current programs for the almost 20 Student Chapters. They are looking into relaunching a concept to make recent technical presentations available on our web site for use by the Student Chapters. We can showcase the various winners from our Excellence in Environmental Engineering & Science Technical Conference in April.

> "When I give the roll call at our October 21, 2016, Board of Trustees meeting Cazenovia, New York, I will ask each Trustee to share their most recent experience in mentoring.

Now back to the theme of mentoring our future environmental engineers and scientists. I want to expand on the challenge I made in the spring issue of the Journal "Just Do It." Take positive action to tell young students and professionals about the Academy, explain why you are Board Certified and why it is important to you. I encourage you to make a presentation at a Student Chapter, or better yet, help start one. When I give the roll call at our October 21, 2016, Board of Trustees meeting Cazenovia, New York, I will ask each Trustee to share their most recent experience in mentoring.

As part of the Technical Conference (see details on page 18), **Program and Plant Performance Improvements with Emphasis on Energy Efficiency and Sustainability** scheduled for October 20, 2016, in Cazenovia, New York, we have structured a 75 minute lunch and networking break to allow ample time for the Trustees and other attendees to mentor the college students. I hope to get students from Syracuse University, Cornell, Colgate, and SUNY-ESF to attend.

In closing, we all have a responsibility to mentor the younger generation and help bring out the "Best of the Best" to help ensure the long-term health and viability of mankind and the natural systems. Maybe they will be able to make sense out of the extreme and unusual weather patterns we are experiencing.

EXECUTIVE DIRECTOR'S PAGE

Burk Kalweit

Science on a Sphere®

As you probably know, one of the things the Academy does is participate in the so-called STEM education field. A quick reminder, STEM stands for science, technology, engineering, and mathematics. Back at the end of April, there was a significant STEM event held at the convention center in Washington, DC. This was an event that has grown by leaps and bounds over the course of the last 10 years to where it now claims to have over 300,000 visitors in attendance over the two-day event. This was my second opportunity to meet the 'kids of all ages' who were there to find out more about technology and the career opportunities that exist across the entire spectrum of science and engineering.

One of the things that you can't help but notice is the level of investment that goes into the festival participants' booths. It seems that little expense is spared in putting together a booth that will both attract visitors and provide them with some rudimentary background knowledge on the technology field of the exhibitor. When you have sponsors like United Technologies and Lockheed Martin, it's easy to see the potential for having very interesting booth content. I believe it was United Technologies that had a working helicopter flight simulator. The line for a 10-minute flight opportunity was fully committed in next to no time. Another defense contractor exhibitor had a retired F-16 in its booth, decked out in Thunderbirds livery.

So you can see the competition among exhibitors for the festival visitors' attention was quite intense. Suffice it to say that the Academy booth was long on personality and somewhat shy of gizmos and eye candy. The best we could do was to hand out copies of the Academy magazine and other publications. Well, actually, that's not entirely correct. We did hand out water droplet squeeze balls that proved to be quite popular with people walking by our booth. *See photos of AAEES at the USA Science & Engineering Festival on page 15.*

Small Blue Marble. A view of the sphere with infrared satellite data overlaid on an earth map.

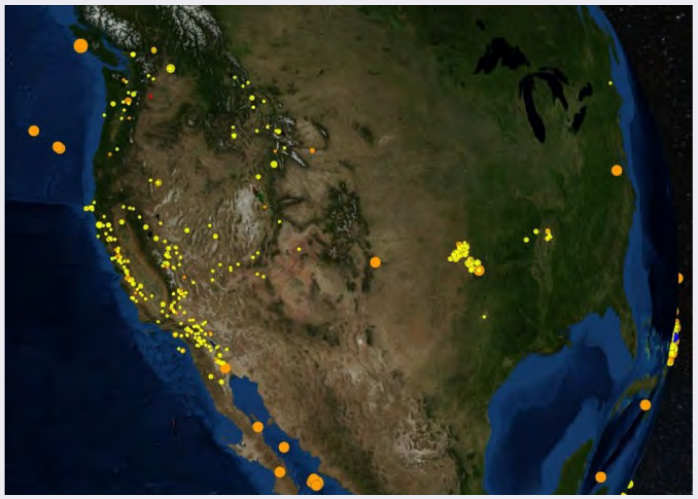
We also had some great volunteers who came down to the Festival to spend time in the booth as ambassadors for the cause of environmental engineering and science. And I can personally attest to the fact that we probably had positive impacts with 10 to 15 high school and college level students with an interest in environmental engineering and environmental science. They were wondering about the usual things -- what does an environmental engineer do and how do I get started in a career in that area?

One of the things that I enjoy the most about being at an event like this is the opportunity to find the unexpected among the exhibits. While the flight simulator and the F-16 were the epitome of cool, there was another booth that attracted my attention. From a distance, all one could see was a canopy tent. Not knowing better, I half expected to see a table laden with candies under that canopy. When I got closer, I was even more intrigued. At the center of the space underneath the tent was a large white sphere. There was also some signage and banners and what not indicating that this booth belonged to the National Oceanographic and Atmospheric Administration (NOAA). It wasn't until a couple of minutes later when the

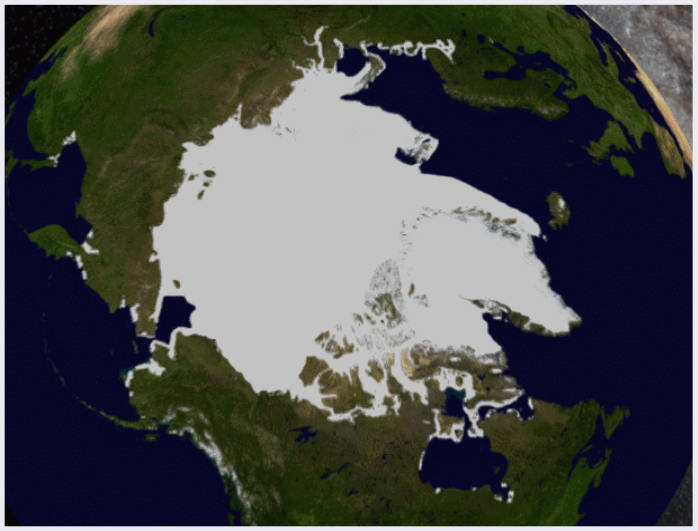
Science On a Sphere® (SOS) is a global display system that uses computers and video projectors to display planetary data onto a six-foot diameter sphere, a giant animated globe.
Credit Will von Dauster/NOAA

Hurricane Sandy forming in 2012, as visualized in NOAA's SOS Explorer. (All screenshots by the author for Hyperallergic)

SOS Theater. The six-foot-wide "Science on a Sphere" was created by NOAA as a tool to teach earth sciences.
Credit Chip Clark/Smithsonian Institution



A nearly real-time map of earthquakes



Arctic sea ice expanding and contracting over the years

Festival opened and the lights went on underneath the canopy that it became clear that this was no ordinary exhibit.

What I was looking at was what the NOAA people refer to as their Science on a Sphere® project. Once the show got going, the white sphere transformed into the "small blue marble" representation of Earth from space that we have all seen hundreds of times. Over the course of the next few minutes the marble transformed itself several times to display things like ocean currents, the location of earthquakes, airplanes in flight, surface lighting at night around the globe, and even a map showing the migratory paths of sea turtles in the Indian Ocean. As you can imagine, this was rather mind-boggling.

Let me borrow from NOAA to give you the official description: Science on a Sphere® (SOS) is a room sized, global display system that uses computers and video projectors to display planetary data onto a six foot diameter sphere, analogous to a giant animated globe. Researchers at NOAA developed Science On a Sphere® as an educational tool to help illustrate Earth System science to people of all ages. Animated images of atmospheric storms, climate change, and ocean temperature can be shown on the sphere, which is used to explain what are sometimes complex environmental processes, in a way that is simultaneously intuitive and captivating."

Science On a Sphere® extends NOAA's educational program goals, which are designed to increase public understanding of the environment. Using NOAA's collective experience and knowledge of the Earth's land, oceans, and atmosphere, NOAA uses Science On a Sphere® as an instrument to enhance informal educational programs in science centers, universities, and museums across the country." Science On a Sphere® is available to any institution and is currently in operation at over 80 facilities in the US.

> "It's one thing to talk about global warming, and quite another to be able to show where the warming is happening and visually demonstrate the amount of the increase.

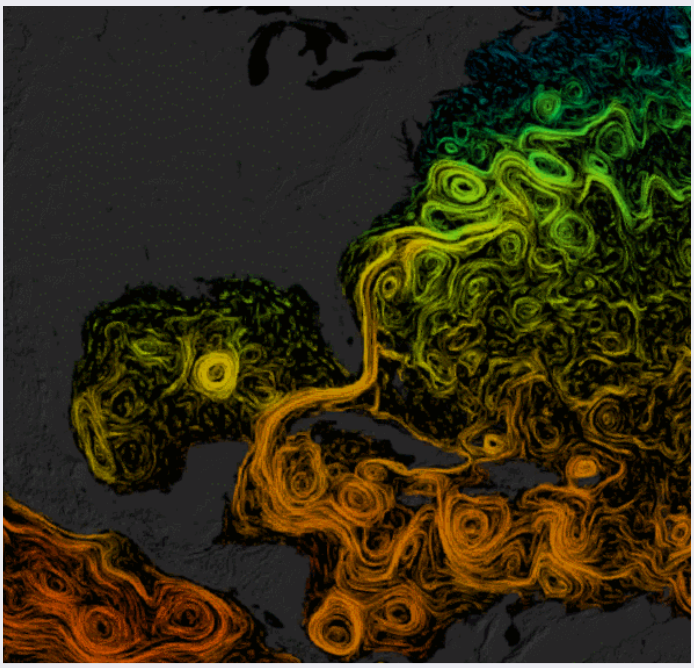
Hilary Peddicord teaches with SOSx (SOS Explorer Lite) at Casey Middle School in Boulder, CO.

> "What's interesting, given that this is a government program, is that the Science on a Sphere hardware and software are available for purchase from NOAA. The cost of a complete Science on a Sphere unit is about $165,000.

"A series of computers feeds data to four projectors that display the images on a sphere 68 inches in diameter, typically in a format of 4,000 by 2,000 pixels. The large scale globe can realistically depict ocean currents, atmospheric temperatures, population trends and other data. In the seven years since its debut, Science on a Sphere has been patented — and the name has been trademarked — and its software has been upgraded to take advantage of advances in computing power. Today, in addition to full-motion video, the display image can be re-rendered in real time, allowing a user to shift the point of view on the globe using a Wii remote wireless controller so that you can see ice pack conditions at the north and south poles or watch the spread of the 2004 Indian Ocean Tsunami."

There are over 800 datasets now available for display on the sphere. Many of those have been produced from NOAA and NASA

Mars
Photo provided by Denver Museum Nature Science

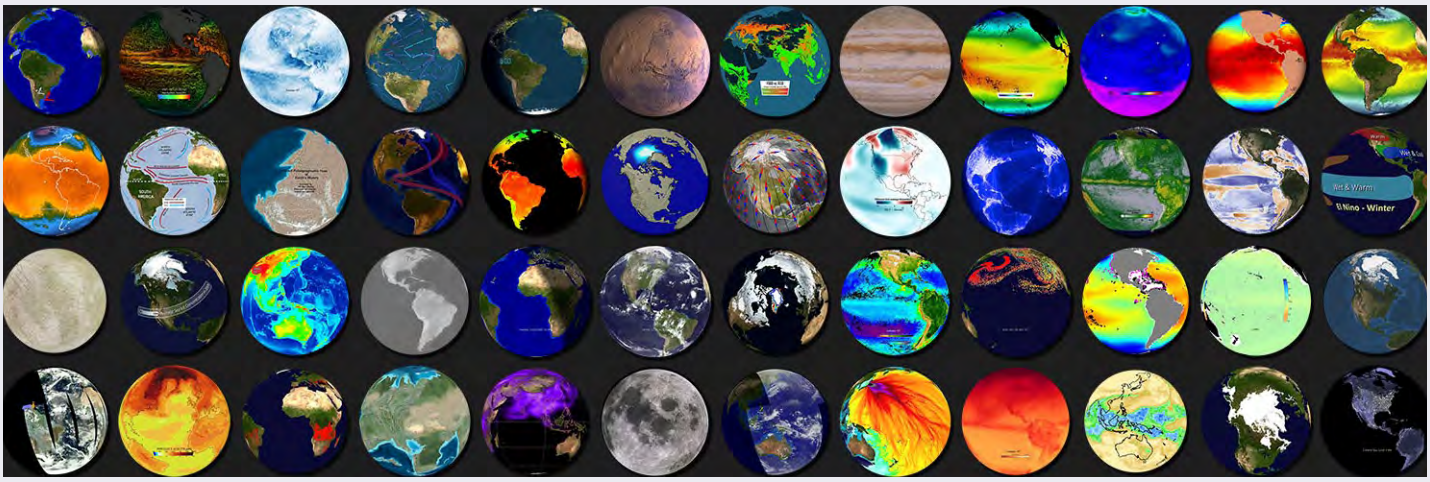


Ocean currents and temperature in 2007

Earth observation programs. Some are compiled from satellite images, others are computer simulations, and others are visualizations of data gathered from surface or satellite sensors.

Some of the popular displays for the Sphere are:

- The "Blue Marble," a static composite satellite image of the Earth created in 2001.
- Weather satellite images showing the entire 2005 hurricane season, which included Katrina and was the most active on record.
- A visualization of global ocean currents, showing the speed and movement of water.
- A visualization of sea surface temperatures.
- A visualization of worldwide wave activity from the 2004 tsunami, as detected by satellites.
- Distribution of particulate pollutants in the atmosphere.



Data Catalog

- A composite image of the Earth at night, showing only illumination from electric lights.
- A model showing global temperature changes from the year 1800 projected through 2300.
- Global air traffic during a 24-hour period gathered from transponder data from commercial aircraft.

What's interesting, given that this is a government program, is that the Science on a Sphere hardware and software are available for purchase from NOAA. The cost of a complete Science on a Sphere unit is about $165,000. Each owner pays for both software and hardware, although NOAA's Office of Education has provided more than $3.7 million to assist with developing exhibits and creating content. The owners purchase their own computers and projectors. NOAA loads the software, provides a crew to install the system and offers support for three years.

When you consider the literally billions of dollars invested by the government into remote sensing and satellite photogrammetry technologies that made all this possible, the asking price is truly a bargain. However, $165,000 is not exactly chump change for most organizations, unless they are in the business of being a college or museum or something of that nature, and have support from donors and sponsors who will be intrigued by the ability to have this great technology on hand at their location or facility.

But I didn't bring you down this path to tease you with this technology. Instead, I want to be the harbinger of good news. It turns out that the folks at NOAA understand that the price of the full system is beyond the reach of most people interested in STEM education. Given that the primary mission of NOAA in developing Science on a Sphere was education, the leaders of the program decided they needed to do something to address this by making a scaled down version of the system available for Macs and PCs -- and by implication, a typical classroom setting.

Called SOS Explorer™ Lite, (SOSx Lite) the package is an introductory version of SOS Explorer and is now freely available for download. SoSx Lite allows users to explore a select group of SOS datasets and walk through three pre-programmed educational tours on a personal computer display or projector screen. SOSx Lite allows everyone, including teachers and their students, to interact with cutting-edge technology and scientific data visualizations with almost any Mac OS X or Windows computer. Check NOAA's requirements to see if your computer can accommodate SOSx Lite. (sos.noaa.gov)

Tools included in the application allow users to zoom into, probe, and graph the data, as well as add supplementary material including websites, videos, pictures, and place marks. In order to make the product more accessible for teachers, lesson plans and pre-programmed tours through age group relevant topics are also available.

There would appear to be an interesting potential for anyone involved in environmental STEM Ed activities to use the NOAA tools as the backdrop for creating stories about what environmental scientists and engineers do. Yes, the data is presented at a very high level (pardon the bad pun), but if we are looking for ways to make the topic more interesting and more tangible to students from the elementary through high school levels, this would appear to be a powerful tool kit to have available. It's one thing to talk about global warming, and quite another to be able to show where the warming is happening and visually demonstrate the amount of the increase. The same applies to discussions of the polar ice caps. It's one thing to quantify what is happening, and quite another to see the changes that occurred in the past 20 years.

So I strongly suggest that you take a look at the NOAA website for the Science on a Sphere program. Anyone with an interest in the environment should find it fascinating. And if you get tired of looking at the Earth images, the NOAA collection also includes similar data for our celestial neighbors - including the moon and Mars. Just take a few minutes to navigate the site and get a feel for the amazing array of data sets contained there, as well as the amazing array of images that tell their story in very convincing fashion. Then give some additional thought to how you might be able to use this capability in your own STEM Ed activities in your neighborhood.

More images at: sos.noaa.gov.

All photos courtesy of NOAA Science On a Sphere, http://sos.noaa.gov

MEMBER NEWS

IN MEMORIAM

Edward "Eddie" Carter Henrichson, P.E., BCEE, passed away suddenly on Thursday, January 28, 2016, at North Cypress Medical Center - shortly before his 44th birthday.

Eddie was born in Bethesda Naval Hospital in Bethesda Maryland on February 14, 1972. He graduated from Edinburg High School in 1990 (Varsity Tennis Team), West Point Military Academy in 1995 with BS in Environmental Engineering, and University of Missouri, Rolla with MS, Engineering Management, 2000.

He was a Registered Professional Engineer (P.E.) in Texas, Oklahoma, and Missouri. He was Board Certified Environmental Engineer (BCEE) with a specially certification in Hazardous Waste Management by the American Academy of Environmental Engineers and Scientists (since 2004).

Before attending West Point, Eddie attended Texas A&M University where he was a proud member of the Corps and the Fish Drill Team. He was selected to be a Fish Drill Team Leader for his sophomore year but chose instead to restart his education at the United States Military Academy at West Point. During his first year at West Point, he was awarded the Army Achievement Medal for his timely intervention during a medical emergency involving the grandmother of a classmate. He was a member of the West Point Ski Patrol and Crewed for the Army West Point Rowing Team.

After graduation from West Point, Eddie served in the United States Regular Army Corps of Engineers from 1995 - 2001, with the 307th Combat Engineer Battalion, 82nd Airborne Division, Fort Bragg, N.C., and with the 91st Combat Engineer Battalion, 1st Cavalry Division, Fort Hood, Texas. He completed the Combined Arms and Service Staff School, Engineering and Officer Basic and Advanced Courses, and was Ranger, Airborne (Master Parachutist), Air Assault, Jumpmaster, Sapper Leader, Master Fitness Trainer, and Air Movement Operations Qualified. He served as Engineer Battalion Operations Officer, Battalion Airborne and Construction Officer, and Combat Engineer Platoon Leader. Among others, he was awarded the Army Commendation Medal (Third Award), and the Humanitarian Service Medal.

Since 2001, Eddie was Principal, Partner and/or Senior Project Manager with the environmental consulting/engineering firms of ERM, ENVIRON, and CH2M, exercising his expertise in solid and hazardous waste management, decontamination and demolition management, environmental and civil engineering design, and construction management. Eddie was a natural and trained leader, an overachiever, a physical force of nature, and a valued member of every team he joined.

He was a triathlete and enjoyed his hobbies of skiing, boating, camping, hiking, fishing, hunting and ranching throughout his lifetime. His favorite and most beloved team however, was his family. He was an amazing and beloved son, son-in-law, husband, brother, cousin, father and friend.

He was truly "larger than life" and his sudden loss to cancer is still unfathomable. Left to cherish his memory are his beloved wife, Lucinda Ann Garnes Henrichson (and her family), their son, Carter Ashton Henrichson (age 9), their twin daughters, Victoria Eva and Isabel Rowan Henrichson (age 6), his father, Preston Edward Henrichson, of Edinburg and McAllen, Texas, his mother, Allyne Sue O'Banion Jackson and her partner, Joseph Dennison IV of Austin, Texas, his "other mother" Rosanna Grace Henrichson and her partner Joe Phillips of Mission and South Padre Island, Texas, his sister Wendy Henrichson Smartt (Tim) of San Antonio, Texas, his brother, Kevin O'Banion Henrichson (Kate) of Austin, Texas, his brother, Preston Harris Henrichson (Analisa), his father and mother in law, Richard Harmon Garnes and Jennifer Jane Garnes of Livingston, Texas, his sisters in law, Kimberly Jo Howard (John) and Tamara Lynn Garnes of Toledo, Ohio, his brother in law, Thomas Richard Garnes (Jenny) of Cleveland, Ohio, and numerous nieces and nephews.

Joseph F. "Joe" Malina, Jr., Ph.D., P.E., BCEE, passed away peacefully on the afternoon of June 14, surrounded by his wife, children, their spouses and grandchildren. He lived a very full and accomplished life of almost 81 years devoted to his family, The University of Texas and his Catholic faith as an active member of the St. Austin Catholic Church community for over 50 years.

Joe was the second of nine children born in Brooklyn, New York on August 24th, 1935 to Joseph F. Malina Sr. and Mary Wesolowski Malina, both first-generation Americans born to Polish and Czechoslovakian immigrants.

Joe began his life-long dedication to his work and education early on, receiving a Bachelor's degree in Civil Engineering from Manhattan College followed by M.S. and Ph.D. degrees in Civil Engineering (Sanitary Engineering) at the University of Wisconsin at Madison. He moved to Austin in 1961 and began his 53 year career at the University of Texas at the Cockrell School of Engineering. He officially retired in the fall of 2012, and continued to mentor and supervise students until the end of 2014.

Joe leaves a lasting legacy as an educational and industry leader, and a respected professional engineer in the field of wastewater treatment. During his more than half a century at UT Austin as an environmental and water resources engineering professor, he supervised 192 graduate students, including 26 PhD students and consulted with over 70 companies. Many of his graduate students have been instrumental in terms of design and operation of wastewater treatment plants throughout the world, and so have helped the environment and society. These accomplishments rightfully earned him high honors in his profession, including awards from the Texas Society of Professional Engineers, American Academy of Environmental Engineers and Scientists, American Water Works Association, Water Environment Association of Texas, Water Environment Federation, American Society of Civil Engineers, and many others.

After moving to Austin, he met his wife Ida and they were married on January 9, 1965. They were blessed with 51 years of marriage and a life centered around children, family and faith.

Joe was preceded in death by his younger brother, Tom. He is survived by wife Ida, daughter Kristyn and her husband Mark Rankin, son Joe and his wife Marianne Malina, daughter Mary and her husband Jaiden Eaton, daughter Alexandra and her husband William Alfaro and daughter Frances and her husband Abraham Tucker. Joe also leaves his 10 adoring grandchildren, Madilyn and Amanda Biscoe, Isabella Rankin, Milo Malina, Kamdyn, Brinkly and Taitym Eaton, Mia Lucette Alfaro and Emma and Noah Tucker.

Dr. Malina had been a Board Certified Environmental Engineer in Sanitary Engineering since 1972 and was a Life Member of the Academy. He was presented with the AAEES Edward J. Cleary Award in 2012. Dr. Malina had served on the AAEES Board of Trustees on several occassions including, most recently, as 2013 Trustee at Large.

Endowment Honoring Malina

The University of Texas at Austin CAEE alumni and friends have generously donated funds to establish an endowment to honor Joe's lasting impact on the department. Funds from this new endowment will be used to provide fellowships for graduate students and research opportunities for undergraduate students. Questions should be directed to Michael Barasch by calling (512) 471-0469. A

Academy Contributors

The American Academy of Environmental Engineers and Scientists is pleased to recognize the following individuals who contributed to several funds of AAEES and the Environmental Engineering and Science Foundation (EESF) during the 2015 calendar year (January 1, 2015 to December 31, 2015). Your contributions are a key source to the continued growth and success of the Academy. We take great pride in recognizing the following:

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DeHart, Robert E. ..... Matthews, NC
Eklund, Carl W. ..... Carmel, CA
Huang, C.P. ..... Newark, DE
Kuhn, Paul A. ..... Maple Grove, MN
Lindmark, Ulf M. ..... Westlake Village, CA
Pujals, Victor Jose ..... Miami, FL
Robinson, Peter E. ..... Hollywood, FL
Stahl, James F. ..... Rancho Palos Verdes, CA
Weimar, Robert A. ..... Auburn, NH

AAEES-KAPPE LECTURE FUND

Chen, Jeffrey J. ..... Palo Alto, CA
Decker, Thomas E. ..... Aldie, VA
Dombrowski, Paul A. ..... Holyoke, MA
Lindmark, Ulf M. ..... Westlake Village, CA
Liu, Charles (Xiaosha) ..... Dix Hills, NY
Lue-Hing, Cecil ..... Burr Ridge, IL
Monroe, Edward W. ..... Pittsburgh, PA
Rehberger, Glenn W. ..... Williamsburg, VA
Vasuki, Nuggehalli C. ..... Dover, DE
Whitman, Ira L. ..... Cranbury, NJ
Xie, Yuefeng ..... Middletown, PA
Young, James Clinton ..... Springdale, AR

ENVIRONMENTAL ENGINEERING AND SCIENCE FOUNDATION (EESF) GENERAL FUND

Al-Ani, Walid ..... Canton, MI
Argento, Vittorio K. ..... Cape Coral, FL
Aulenbach, Donald B. ..... Clifton Park, NY
Brass, Herbert Jason ..... Loveland, OH
Buzby, Mary Elizabeth ..... Barnegat Light, NJ
Canzano, Pasquale S. ..... Dover, DE
Chen, Jeffrey J. ..... Palo Alto, CA
Cleasby, John L. ..... Ames, IA
Curtis, Lamont W. ..... Newport News, VA
Dominy, Matthew ..... Gilbert, AZ
Ewing, Lewis J. ..... Irvine, CA
Forger, Daniel B. ..... Big Indian, NY
Foulke, Randall L. ..... Raleigh, NC
Gadhamshetty, Venkataramana ..... Rapid City , SD
Graef, Stephen P. ..... Greenville, SC
Harkness, Gregg E. ..... Orlando, FL
Holt, Leonard L. ..... Santa Rosa, CA
Hough, Merlyn L. ..... Springfield, OR
Hurst, Boyd E. ..... Louisville, KY
Kohlhoff, Karl F. ..... Gilbert, AZ
Lederman, Peter B. ..... New Providence, NJ
Lindmark, Ulf M. ..... Westlake Village, CA
Martenson, Dennis R. ..... Medina, MN
McMasters, Foster A. ..... Bay Village, OH
Mohanka, Shyam S. ..... Schenectady, NY
Richardson, Elmo A. ..... Macon, GA
Rimer, Alan E. ..... Raleigh, NC
Vasuki, Nuggehalli C. ..... Dover, DE
Vicory, Alan H. ..... Villa Hills, KY
White, Robert L. ..... San Clemente, CA
Whitman, Ira L. ..... Cranbury, NJ

EESF-ECKENFELDER MEMORIAL FUND

Bartilucci, Nicholas J. ..... Woodbury, NY
Burrows, William Dickinson ..... Frederick, MD
Fangmann, Steven A. ..... Woodbury, NY
Guarino, Carmen F. ..... Philadelphia, PA

Harkness, Gregg E. ..... Orlando, FL
Hendricks, David W. ..... Arvada, CO
Lindmark, Ulf M. ..... Westlake Village, CA
Miller, Truesdell C. ..... Brentwood, TN
Novotny, Vladimir ..... Newburyport, MA
Paulson, Glenn ..... Washington, DC
Ramaswami, Dharmarajan (Ram) ..... Centennial, CO
Russell, Larry L. ..... Berkeley, CA
Schmidt, Harold E. ..... Winter Park, FL
Stein, Robert M. ..... Charlotte, NC
Tischler, Lial F. ..... Round Rock, TX
Vasuki, Nuggehalli C. ..... Dover, DE
Young, James Clinton ..... Springdale, AR

EESF-FRED POHLAND FUND

Aitken, Michael D. ..... Chapel Hill, NC
Grady, C.P. Leslie ..... Harrisonburg, VA
Herrick, Robert A. ..... Cary, NC
Ledbetter, J. Leonard ..... Kennesaw, GA
Murray, William T. ..... Buda, TX
Pavlostathis, Spyros G. ..... Atlanta, GA
Pujals, Victor Jose ..... Miami, FL
Vasuki, Nuggehalli C. ..... Dover, DE

EESF-K-12 STUDENT COMPETITION

Lanyon, Richard F. ..... Evanston, IL
Lue-Hing, Cecil ..... Burr Ridge, IL
Mohanka, Shyam S. ..... Schenectady, NY
Nichols, Robert L. ..... Ft. Worth, TX
Schoenberger, Robert J. ..... Downingtown, PA
Vasuki, Nuggehalli C. ..... Dover, DE
Velazquez, Jose F. ..... Denver, CO
Wolf, Charles M. ..... College Station, TX

EESF-STUDENTS & YOUNG PROFESSIONALS FUND

Abu, Tanko Adegba ..... Glasgow, GLG United Kingdom
Clark, David K. ..... Los Angeles, CA
Dedovic-Hammond, Slavica ..... Playa Del Rey, CA
Ergas, Sarina J. ..... Tampa, FL
Klafka, Steven J. ..... Madison, WI
Lanyon, Richard F. ..... Evanston, IL
Lindmark, Ulf M. ..... Westlake Village, CA
Miller, Truesdell C. ..... Brentwood, TN
Mohanka, Shyam S. ..... Schenectady, NY
Murthy, Prahlad N. ..... Wilkes-Barre, PA
Rogers, W.G. (Gary) ..... Scottsdale, AZ
Selna, Michael W. ..... Huntington Beach, CA
Silverstein, JoAnn ..... Boulder, CO
Tarr, James N. ..... Rolling Hills Estates, CA
Tchobanoglous, George ..... Davis, CA
Vasuki, Nuggehalli C. ..... Dover, DE

EESF-WILLIAM BREWSTER SNOW AWARD

Graef, Stephen P. ..... Greenville, SC
Lawrence, Alonzo W. ..... Pittsburgh, PA
Lue-Hing, Cecil ..... Burr Ridge, IL
Vasuki, Nuggehalli C. ..... Dover, DE

AAEES at the USA Science and Engineering Festival

Here are some of the photos from the USA Science and Engineering Festival in Washington, D.C. the weekend of April 16-17, 2016. Thanks to all those that helped to make it happen! It was a wonderful time had by all the volunteers. We were able to talk to a lot of young, future engineers and scientists. Let's hope we run into them sometime down the road!

AAEES would also like to thank the following for manning the booth: **Paul Bassette**, P.E., BCEE, **J. Kenneth Klewicki**, Ph.D., P.E., BCEE, **John Meyers**, P.E., BCEE, **Suli Wang**, P.E., BCEE, **Priyali Sen**, P.E., BCEE, and Executive Director **Burk Kalweit**. A special thank goes to the Chief of the Helpers, **Richard Pope**, P.E., BCEE.

USA SCIENCE & ENGINEERING FESTIVAL


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04/17/2016 11:54


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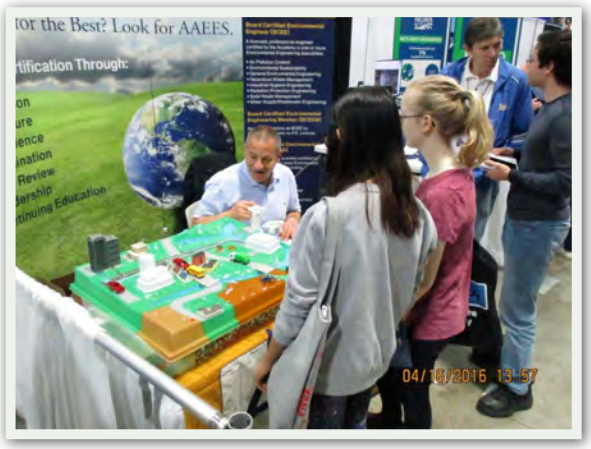
04/17/2016 09:19



USA Science and Engineering Festival visionary and founder **Lawrence A. Bock** – a tireless advocate for STEM education and innovation – died July 7 of pancreatic cancer at his home in the San Diego area. He was 56.

Richard Pope, Chair of the AAEES K-12 Education Committee, noted that his passing is a profound loss, "but his legacy of inspiring math and science education will have a lasting impact on students and our nation for future generations."

Larry launched the San Diego Science Festival to educate and inspire our next generation to pursue STEM careers. He then evolved this into the USA Science & Engineering Festival, the nation's largest science festival held biennially in Washington, D.C. with an estimated 300,000 attendees at the session in April of this year.

In addition to his work with the Festival, Larry was a serial entrepreneur who founded, co-founded or financed the early stage growth of 40 companies from inception to an aggregate market capitalization of $70 billion.

In lieu of flowers or gifts, contributions may be made to Science Spark to assist in ensuring the continuation of the USA Science and Engineering Festival, his crowning achievement. The Festival combines his love of science, entrepreneurship, sense of adventure, and his fondest hopes and dreams as a Dad.

AMERICAN ACADEMY OF ENVIRONMENTAL ENGINEERS & SCIENTISTS®

TECHNICAL CONFERENCE

Program and Plant Performance Improvements with Emphasis on Energy Efficiency and Sustainability

THURSDAY, OCTOBER 20, 2016 | HAMPTON INN & SUITES | CAZENOVIA, NY

The American Academy of Environmental Engineers & Scientists (AAEES) will be hosting a one-day technical conference in Cazenovia, New York in conjunction with the Academy's Board of Trustees Meeting the following day. The selected speakers represent the "Best of the Best" professionals from Central New York in their environmental specialities of water and wastewater. Attendees will hear about the proven and state-of-the-art technologies and concepts to maximize performance and improve energy efficiencies and sustainability.

Time		Session	Presenter(s)
8:00 – 8:30	30 min	**Registration and Coffee**	
8:30 – 8:35	5 min	**Welcome**	 **Howard LaFever, PE BCEE** President (AAEES)
8:35 – 9:30	55 min	**Recent Energy Study and ESSCO Formation**	**Tom Rhoads, PE** Commissioner Onondaga County Department of Water Environment Protection (WEP)
9:30 – 10:30	60 min	**Water Treatment Plant Process Improvements for Water Quality Efficiency and Waste Minimization**	**Dick Goodney, PE** Director of Engineering **Phil Tangorra** Director of Water Quality Mohawk Valley Water Authority (MVWA)
10:30 – 10:45	15 min	**Coffee Break**	
10:45 – 11:45	60 min	**Design Concepts for New Egg Shape Anaerobic Digesters/ Co-Generation**	 **Ryan Fisher, PE BCEE** Project Manager GHD Consulting Services Inc. (GHD)
11:45 – 1:00	75 min	**Lunch and Networking** Students from SUNY-ESF, Cornell, and Colgate will be invited to join us in a networking opportunity	
1:00 – 2:00	60 min	**Emerging Role of Nano Technology Application to Water and Wastewater**	**Dr. Cornelius (Neil) Murphy** Senior Fellow State University of New York College of Environmental Science and Forestry (SUNY-ESF)

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THURSDAY, OCTOBER 20, 2016 | HAMPTON INN & SUITES | CAZENOVIA, NY

Time		Session	Presenter(s)
2:00 – 3:00	60 min	**OCWA Efficiency Improvements from Source to Customers**	**Andrew Weiss, PE** Executive Engineer Onondaga County Water Authority (OCWA)
3:00 – 4:00	60 min	**Achieving Net Zero Energy at a Wastewater Treatment Plant**	**Dan Ramer** Chief Operator City of Ithaca Ithaca Area Wastewater Treatment Plant
4:00 – 4:05	5 min	**Summary and Adjournment**	**Howard LaFever**

Registration Fees

Members	$100.00
Non-Members	$125.00
Students	$50.00

Register online now at http://bit.ly/AAEES2016Conference

The Fulbright Program at 70 Years Old

By Daniel Oerther, Ph.D., P.E., BCEE

For seventy years, people-to-people diplomacy has been promoted and accomplished through the success of the Fulbright Program. In 1946, legislation introduced by then-Senator J. William Fulbright of Arkansas led to the creation of the world's premiere, competitive, merit-based opportunity for international exchange of students, scholars, teachers, professionals, scientists, and artists. Since its inception, more than 310,000 individuals have participated in one or more of the Fulbright Programs.

James William Fulbright was born in Sumner, Missouri, on April 9, 1905. He earned a B.A. in political science from the University of Arkansas in 1925 and a M.A. from Oxford University where his favorable views of the critical importance of people-to-people diplomacy were nurtured. After completing a law degree at George Washington University in Washington, D.C., Fulbright returned to teach law in Arkansas, and by 1941, he was appointed as the then-youngest-ever serving president of the University of Arkansas. Beginning in January, 1943, Fulbright served five consecutive terms as Senator representing Arkansas in the U.S. Congress where he gained prominence as the longest serving chair of the Senate Foreign Relations Committee from 1959 until 1974.

The Bureau of Educational and Cultural Affairs of the U.S. Department of State, under the direction of the Assistant Secretary of State, administers the Fulbright Program. Responsibility for establishing policy guidelines for the Program and final selection of Fulbrighters is performed by the twelve Presidential-appointees to the J. William Fulbright Foreign Scholarship Board. Implementation of the Program with 155 partner nations is carried out through approximately 50 bi-national Fulbright Commissions, and the remainder of the Fulbright Scholars are managed directly by Overseas Diplomatic Missions of the U.S. Additional support is provided by a number of private organizations including the Council for International Exchange of Scholars.

Each year, about 8,000 individuals participate in the Fulbright Program. Approximately 1,600 U.S. students travel overseas while 4,000 foreign students visit the U.S. Approximately 1,200 U.S. scholars (including faculty and professionals) visit other countries, and 900 visiting scholars come to the U.S. for extended stays. The impressive portfolio of opportunities within the Fulbright Program include the typical semester-long experiences of undergraduate students, two-week-long visits by professionals from the U.S. to other

Daniel Oerther poses with Fulbright Alumni employed at the United States Department of State, the Fulbright Commissioners, and ECA Assistant Secretary Evan Ryan in the Diplomatic Reception Rooms of the US Department of State.

Daniel Oerther poses on the steps of a vav (stepwell) with a group of students from the Missouri University of Science and Technology and Sardar Patel University and nurses from Hinduja National Hospital during a study abroad trip to Gujarat, India.

countries through the Fulbright Specialist Program, and year-long studies of eminent scholars through the prestigious Fulbright Distinguished Chair Awards.

In 2015, I was honored to be invited to a reception of Fulbright Alumni to witness the swearing in of members of the J. William Fulbright Foreign Scholarship Board by Assistant Secretary of State Evan Ryan in the Treaty Room at the U.S. Department of State Headquarters in the Harry S. Truman Building in Washington, D.C. My participation reflected my successful completion of three Fulbright Awards including a Fulbright-Nehru Core Award to the Indian Institute of Science in 2005, a Fulbright-Pai Fellowship to Manipal University in 2005, and the inaugural Fulbright-ALCOA Distinguished Chair in Environmental Sciences and Engineering to the University of Western Para, Brazil in 2012.

For me, the Fulbright Program is all about relationships -- the relationships that I made with students, faculty, administrators, staff, and locals in India and Brazil, and the relationships that I made with my fellow citizens in the U.S. when I returned home to share stories about my Fulbright experiences. Today, the power of social media has greatly influenced our ability to know more about and share more of our stories with people in other countries. David Hasselhoff and Baywatch, Levi's, and rock 'n roll are being replaced by my Facebook Friends, my Instagram followers, my Tweets, and my contacts on WhatsApp. In the short timespan between my first Fulbright visit to India in 2005 and my most recent Fulbright experience to Brazil in 2012, a brave new world of connectivity has changed the landscape of diplomacy.

In my view, the cultural ambassadors of the Fulbright Program transformed the professional diplomatic corps of Foreign Service Officers in a manner similar to the incredible transformation that social media has played in the pen-pal relationship. For both good and bad, we have become a more interdependent and interconnected world of global citizens always at thumbs length from our neighbors. And while some may argue that our newfound abilities to communicate, virtually, over great distances in asynchronous time has created a world where the physical travel of cultural ambassadors is no longer necessary, I would argue that there is a greater need for the Fulbright Program today as compared to any time since its inception.

Because of its size, reputation, and detailed screening process, the Fulbright Program selects high-quality cultural ambassadors, and provides financial and logistical support to effectively navigate what can otherwise be challenging cultural divides. Successful Fulbrighters share their stories when they return home, further stimulating a demand to know more about others around the world, and encouraging all of humanity to dismantle the mistrust and needless stereotypes that often separate what are otherwise similar moms and dads, daughters and sons, neighbors and co-workers. And the technology at our thumb tips provides the platform to nurture and maintain those relationships -- I can always count on my extended Fulbright family within India and within Brazil to like pictures of my wife and children on Facebook.

For those colleagues and their friends and family who want to know the tricks for a successful Fulbright application, my advice is to read carefully the materials provided by the U.S. Department of State and its partners. A Fulbrighter is, first and foremost, a cultural ambassador -- sharing knowledge of their home and gaining knowledge of their host. And while licensed professionals (engineers, accountants, architects, attorneys, nurses, pharmacists, and physicians) may not be able to practice their craft as part of a Fulbright Award, the Fulbright Program actively seeks those with advanced training in science, technology, engineering, and math (STEM). In particular, the Fulbright Specialist Program (with details available at: http://www.cies.org/program/fulbright-specialist-program) represents an excellent opportunity for full-time professionals to nurture their desires to establish linkages with scholars and professionals at host institutions in countries around the globe.

If you have never spoken to a Fulbrighter, please do yourself a favor and reach out to your local university. The chances are good that a cultural ambassador from another country will be visiting nearby, and would enjoy meeting with you. Perhaps even better, you may meet with a U.S. Fulbrighter and catch the enthusiasm to travel overseas to represent the U.S. The mission of the U.S. Department of State is to, "create a more secure, democratic, and prosperous world for the benefit of the American people and the international community." In my opinion, the people-to-people diplomacy of the Fulbright program plays a major role in achieving these ambitious goals. I hope you will join me and fellow Fulbrighters in the autumn of 2016 celebrating this, the seventieth anniversary of the Fulbright Program.

Dr. Daniel Oerther is John A. and Susan Mathes Chair of Environmental Health Engineering at Missouri University of Science & Technology. He has been a Board Certified Environmental Engineer in Water Supply and Wastewater Engineering since 2005. Dr. Oerther is also the 2014 recipient of the Excellence in Environmental Engineering Education Award and won the 2016 Superior Achievement Award for his project, Improved Water Quality for Ixcan Guatemala. He currently serves as Treasurer of the Academy.

The 46th Annual Excellence in Environmental Engineering and Science Awards Luncheon and Technical Conference

The 46th Annual Excellence in Environmental Engineering and Science Awards Luncheon and Technical Conference was held on April 14, 2016, at the National Press Club in Washington, DC. This all-day event celebrates excellence in environmental engineering and science with the recognition of professionals, students, and organizations in academia, professional firms, and government agencies.

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1. Keynote Speaker Dr. Domenico Grasso
2. Dr. Daniel Oerther, pictured with wife Sarah, won the Superior Achievement Award for Improved Water Quality for Ixcan Guatemala.
3. Dr. James W. Patterson presenting the 2016 Innovyze Excellence in Computational Hydraulics/Hydrology Award to Jennifer Jefferson
4. Mette Friis-Anderson of Veolia Water was on hand to present the 2016 W. Wesley Eckenfelder Industrial Waste Management Medal to Capt. Howard R. Warner, III

David Gaddis, P.E., BCEE, of CDM Smith and AAEES's Chair of the Excellence in Environmental Engineering and Science Awards Committee, served as the Master of Ceremonies for the awards luncheon while President-Elect Dr. Robert C. Williams, P.E., BCEE, took on the role of moderating the morning and afternoon sessions of the technical conference.

The Excellence in Environmental Engineering and Science Awards Luncheon and Technical Conference continues to grow each year. This would not be possible if not for those who attend this event, and but also for our AAEES Patrons (listed on the inside cover) and the Award Sponsors (listed on page 28) for their support of this amazing event.

The 2016 Keynote Speaker, Dr. Domenico Grasso, P.E., DEE, Provost and Professor of University of Delaware, delighted the crowd with his speech, *The Future Ain't What it Used to Be.*

Eight individual were recognized for their excellence and leadership in the environmental engineering and environmental science professions.

Congratulations to:

- **Gordon Maskew Fair Award** recipient - Dr. Bruce E. Rittman
- **Edward J. Cleary Award** recipient - Kira Lynch
- **Stanley E. Kappe Award** recipient - Dr. Cecil Lue Hing
- **Honorary Member Award** recipient- Ken Kirk
- **International Honorary Member Award** recipient - Professor Ruey-An Doong
  W. Brewster Snow Award recipient - Gregory Hinds (Advisor: Dr. Sarina Ergas)
- **W. Wesley Eckenfelder Graduate Research Award** recipient - Dr. Matthew Verbyla
- **Innovyze Excellence in Computational Hydraulics/Hydrology Award** recipient - Jennifer Jefferson (Advisor: Dr. Reed Maxwell)

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1. Dr. Bruce Rittmann is the 2016 Gordon Maskew Fair Award Recipient
2. Howard LaFever presents the Grand Prize in Research to DC Water for Neutrality at a Wastewater Treatment Works. Accepting the award were Shravani Ravadagundhi, Tim Van Winkle, Haydee DeClippeleir, Arifur Rahman, Harold Yapuwa, and Ahmed Al-Omari
3. Glen Pearson and Jaime Langer accept the Grand Prize in Environmental Sustainability for Dewberry's Reuter-Hess Water Purification Facility
4. 2016 International Honorary Award Recipient, Professor Ruey-An Doong

Excellence in Environmental Engineering and Science (E3S) Awards

Sixteen awards were presented to the winners of the Excellence in Environmental Engineering and Science awards competition. The winning projects were recognized for their excellence and innovation, thus being recognized as the best environmental engineering and science projects in the world.

Congratulations to:

- **Superior Achievement in Environmental Engineering and Excellence:** Improved Water Quality for Ixcan Guatemala by Daniel B. Oerther, Ph.D., P.E., BCEE. Dr. Oerther was also a presenter at the technical conference.
- **Design - Grand Prize:** AlexRenew State-of-the-Art Nitrogen Upgrade by CH2M. Richard Voigt, P.E., presented this project at the technical conference.
- **Honor Award - Design:** Orange County Groundwater Replenishment System Initial Expansion by Black & Veatch
- **Environmental Sustainability - Grand Prize:** Delano biottta™ Wellhead Nitrate Treatment by Carollo Engineers, Inc. This project was presented at the technical conference by Dr. Jess Brown.
- **Environmental Sustainability - Grand Prize:** Reuter-Hess Water Purification Facility by Dewberry. Glen D. Pearson and Jaime Langer were presenters at the technical conference.
- **Environmental Sustainability - Honor Award:** OCSD Central Generation Emissions Control (J-111) by Orange County Sanitation District
- **Industrial Waste Practice - Grand Prize and W. Wesley Eckenfelder Industrial Waste Management Medal Recipient:** Design/Build of Remediation Systems for VOC-Contaminated Groundwater, Soil Gas, and Indoor Air at Naval Base Point Loma by Navy Region Southwest. Angela Lind and Pete Everds were presenters for the technical conference.

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1. Former NACWA Executive Director Kenneth Kirk is the 2016 Honorary Award recipient.
2. Drs. Tian C. Zhang and Yongheng Huang accepting the Grand Prize in University Research for Kinetics and Mechanistic Framework for Pollution Control Using Activated Iron Processes.
3. Pete Everds, Angela Lind, and Capt. Howard Warner II accept the Grand Prize in Industrial Waste Practice for Navy Region Southwest's Design/Build of Remediation Systems for VOC-Contaminated Groundwater, Soil Gas, and Indoor Air at Naval Base Point Loma
4. President Howard LaFever presents the Grand Prize in Planning award to David Pettijohn for Los Angeles Department of Water and Power's Water Loss Task Force Action Plan

- **Operations/Management - Grand Prize:** Waste Not, Want Not - Recycling Food Waste at a Wastewater Treatment Plant by Sanitation Districts of Los Angeles County. Charles Boehmke presented this project at the technical conference.
- **Operations/Management - Honor Award:** Best-in-Class O&M Systems and Organizational Improvements for the City of Columbia Utilities Department by CDM Smith
- **Planning - Grand Prize:** Water Loss Task Force Action Plan by Los Angeles Department of Water and Power. David R. Pettijohn presented LADWP's project at the technical conference.
- **Research - Grand Prize:** Closing in on Energy Neutrality at a Water Resource Recovery Facility: Modifying Contact Stabilization for 21st Century Drivers by DC Water. Ahmed Al-Omari and Haydee De Clippeleir, Ph.D., presented this project at the technical conference.
- **Research - Honor Award:** Critical Assessment of Process Odorants by Orange County Sanitation District
- **Small Firms - Grand Prize:** Mountain Water & Sanitation District Wastewater Treatment Improvement Project by AquaWorks DBO, Inc. Mic Ball was presenter at the technical conference.
- **Small Firms - Honor Award:** Cultural Integration in Wastewater Treatment - SBA Temple by McCrone
- **Small Projects - Grand Prize:** Remediation of a Former Manufactured Gas Plant Brownfield Property in Downtown Tampa Florida by Geosyntec Consultants, Inc. Rachel Klinger, P.E. presented this project for the technical conference.
- **University Research - Grand Prize:** Kinetics and Mechanistic Framework for Pollution Control Using Activated Iron Processes by University of Nebraska-Lincoln and Texas A&M University. Drs. Tian Zhang and Yongheng Huang were on hand to present their project at the technical conference.

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1. Aklile Tesfaye accepting a special recognition award on behalf of DC Water.
2. The topic of AlexRenew won the Grand Prize in Design for the E3S Competition and Honor Award in Environmental Communications. Pictured are Marialena Hatzigeorgiou, Lisa Racey, Janelle Okori, Rich Voigt, Paula Sanjines, Savita Schlesinger, and Dan Lynch
3. Dr. Jess Brown accepting Carollo Engineers' Grand Prize in Environmental Sustainability for Delano biottta™ Wellhead Nitrate Treatment Demonstration Project
4. 2016 W. Wesley Eckenfelder Graduate Research Award Recipient, Dr. Matthew Verbyla

Environmental Communications Awards

Two awards were presented for the Environmental Communications Awards competition. The winning projects are recognized for the task of effectively educating the public on the costs and scope of environmental engineering and science projects.

Congratulations to:

- **Grand Prize:** Communicating the Value of Water Conservation During California's Historic Drought by Entrant: Metropolitan Water District of Southern California
- **Honor Award:** Rebranding AlexRenew by Alexandria Renew Enterprises

Full profiles of all individuals and winning projects were published in the Spring 2016 (V52, N2) issue of *Environmental Engineer and Scientist* and can also be found on the Academy website at http://www.aaees.org.

Thank you to **Marisa Waterman**, AAEES's Marketing Specialist, for doubling as our photographer for this event. More photos are available at https://www.facebook.com/AAEESdotORG and https://www.flickr.com/photos/aaeesdotorg.

A special thank also goes out to AAEES Manager of Special Projects, **Sammi Olmo** for her hard work in organizing AAEES's premier annual event.

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1. Dr. Cecil Lue-Hing is presented the 2016 Stanley E. Kappe Award by Dr. James Patterson
2. Charles Boehmke accepts Grand Prize in Operations/Management on behalf of Sanitation Districts of Los Angeles County's Waste Not, Want Not - Recycling Food Waste at a Wastewater Treatment Plant.
3. The Grand Prize in Small Projects was accepted by Bill Pence, Jim Langenback, and Rachel Klinger along with Howard LaFever for Geosyntec's Remediation of a Former Manufactured Gas Plant Brownfield Property in Downtown Tampa, Florida
4. Dee Zinke accepts Metropolitan Water District of Southern California's Grand Prize in Environmental Communications for Communicating the Value of Water Conservation During California's Historic Drought.

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1. Gregory Hinds, 2016 Recipient of the William Brewster Snow Award.
2. Mic Ball presented the Grand Prize in Small Projects from Howard LaFever for AquaWorks DBO's Mountain Water & Sanitation District Wastewater Treatment Improvement Project.
3. David Gaddis served as Master of Ceremonies for this year's event.
4. Dr. Dan Oerther presents the 2016 Edward J. Cleary Award to Kira Lynch.
5. Two AAEES Past Presidents, Dr. Tim Shea (2005) and Dr. Christian Davies-Venn (2014).
6. David Heiser viewing display panels of award winning projects.

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Innovyze Excellence in Computational Hydraulics/Hydrology Award

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W. Wesley Eckenfelder Industrial Waste Management Medal

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2015 Financial Statements

INDEPENDENT AUDITORS' REPORT

We have audited the accompanying financial statements of the American Academy of Environmental Engineers and Scientists, Inc. (a nonprofit organization), which comprise the statement of financial position as of December 31, 2015, and the related statements of activities and changes in net assets and cash flows for the year then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of American Academy of Environmental Engineers and Scientists, Inc. as of December 31, 2015, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matter

The 2014 financial statements were reviewed by us and our report thereon, dated June 16, 2015, stated we were not aware of any material modifications that should be made to those statements for them to be in conformity with accounting principles generally accepted in the United States of America. However, a review is substantially less in scope than an audit and does not provide a basis for the expression of an opinion on the financial statements.

Askey, Askey, & Associates, CPA, LLC
Certified Public Accountants
Leonardtown, Maryland
April 1, 2016

2015 FINANCIAL STATEMENT

NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2015 AND 2014

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature and Organization

American Academy of Environmental Engineers and Scientists, Inc. (the Academy) was founded in 1955 to improve the practice of environmental engineering by certifying properly-qualified environmental engineering specialists, accrediting university environmental engineering curricula and by informing the public and environmental engineers through lectures, publications and other venues regarding proper environmental practices. The Academy's primary source of revenue is certification fees from its members.

Basis of Accounting

The financial statements of the Academy have been prepared in accordance with accounting principles generally accepted in the United States of America on the accrual basis of accounting. Accordingly, revenue is recognized when earned and expenses are recognized when incurred.

Basis of Presentation

Financial statement presentation follows the requirements of the Financial Accounting Standards Board. As such, the Organization reports its financial position and activities according to three classes of net assets (unrestricted net assets, temporarily restricted net assets, and permanently restricted net assets) based on the existence or absence of donor-imposed restrictions.

Revenue Recognition

Certification fees and certain other revenues are recorded as deferred revenue upon receipt and are recognized as revenue in the period to which the fees relate.

Contributions received are recorded as unrestricted, temporarily restricted, or permanently restricted support, depending on the existence and/or nature of any donor-imposed restriction. Support that is restricted by the donor is reported as an increase in unrestricted net assets if the restriction expires in the reporting period in which the support is recognized. All other donor-restricted support is reported as an increase in temporarily or permanently restricted net assets, depending on the nature of the restriction. When a restriction expires (that is, when a stipulated time restriction ends or a purpose restriction is accomplished), temporarily restricted net assets are reclassified as unrestricted net assets and reported in the statement of activities as net assets released from restrictions. Unexpended grant awards are classified as refundable advances until expended for the purpose of the grants since they are considered conditional promises to give.

Cash and Cash Equivalents

For purposes of the statement of cash flows, cash and cash equivalents consist of interest bearing and non-interest bearing demand deposits.

Exhibit A

Statements of Financial Position
December 31, 2015 (Audited) and 2014 (Reviewed)

	2015	2014
Assets		
Current Assets		
Cash and Cash Equivalents	$ 264,369	$ 208,854
Accounts Receivable	24,984	14,498
Prepaid Expenses	49,430	28,608
Total Current Assets	338,783	251,960
Property and Equipment, Net	14,396	19,423
Other Assets		
Trademarks, Net	9,191	8,278
Security Deposit	3,728	3,728
Total Other Assets	12,919	12,006
Total Assets	$ 366,098	$ 283,389
Liabilities and Net Assets		
Current Liabilities		
Accounts Payable and Accrued Expenses	$ 3,500	$ 6,661
Due to the Foundation	3,710	1,870
Deferred Revenue	269,390	190,302
Total Current Liabilities	276,600	198,833
Net Assets		
Unrestricted	72,789	67,847
Unrestricted - Board Designated	16,709	16,709
Total Net Assets	89,498	84,556
Total Liabilities and Net Assets	$ 366,098	$ 283,389

The Accompanying Notes to Financal Statements
Are an Integral Part of These Financial Statements

Accounts Receivable

Accounts receivable consists of amounts due for certification fees and reimbursements at the end of the year. Management considers all accounts receivable to be fully collectible; accordingly, an allowance for doubtful accounts has not been established.

Property and Equipment

Property and equipment acquisitions in excess of $500 are capitalized and recorded at cost as of the date of acquisition or fair value as of the date of contribution. Depreciation is calculated using the straight-line method based on the estimated useful lives of the assets. See also Note 2.

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results may differ from those estimates.

Fair Value of Financial Instruments

Unless otherwise indicated, the fair value of all reported assets and liabilities which represent financial instruments (none of which are held for trading purposes) approximate the carrying values of such amounts.

Program Service Expenses

Program service expenses represent the direct cost of performing programs. Direct costs do not include salaries and related expenses. Management and general costs have not been allocated to such programs.

Income Taxes

The Academy is exempt under Section 501(c)(6) of the Internal Revenue Code from paying federal income tax on any income except unrelated business income. No provision has been made for income taxes as the Academy has no net unrelated business income. The Academy's federal information returns are generally subject to examination by the Internal Revenue Services for three years after the date they are filed.

2. PROPERTY AND EQUIPMENT

Property and equipment consists of the following at December 31:

	Estimated Lives (in years)	2015	2014
Furniture and Equipment	3-7	$27,924	$27,924
Less accumulated depreciation		(13,528)	(8,501)
		$14,396	$19,423

Depreciation expense for the years ended December 31, 2015 and 2014 was $5,027 and $4,637, respectively.

Exhibit B

Statements of Activities and Changes in Net Assets
For the Years Ended December 31, 2015 (Audited) and 2014 (Reviewed)

	2015	2014
Support and Revenue		
Certifications Fees	$ 409,208	$ 410,139
Meetings	49,035	49,004
Publications	30,937	38,929
Contributions	21,917	27,062
Patrons Program	16,082	
Other Income	14,816	18,991
Kappe Lecture	4,900	5,950
Investment Income	62	60
Loss on Disposal of Property, Equipment, and Trademarks		(3,277)
Total Support and Revenue	$ 546,957	$ 546,858
Expenses		
Program Services		
Memberships	42,469	39,119
Meetings and Seminars	19,850	19,623
Public Education	12,309	15,756
Environmental Engineer	8,820	10,608
Publications	6,969	7,520
Certificate/Membership	8,684	9,787
Kappe Lecture	2,800	4,900
Committee Expense	1,724	2,092
Patrons Program Expense	1,048	
Total Program Service Expense	104,673	109,405
Management and General Expenses		
Staff Salaries, Fringe Benefits and Contract Employment	$ 318,560	$ 297,792
Office Expense	87,384	86,244
Legal, Accounting and Miscellaneous Fees	9,523	13,936
Officer and Trustee Expenses	10,320	9,473
Insurance	5,079	4,968
Depreciation and Amortization	5,617	5,675
Bad Debt Expense		2,228
Awards	859	874
Total Management and General Expenses	437,342	421,190
Total Expenses	542,015	530,595
Change in Net Assets	4,942	16,263
Net Assets - Beginning of Year	84,556	68,293
Net Assets - End of Year	$ 89,498	$ 84,556

The Accompanying Notes to Financal Statements Are an Integral Part of These Financial Statements

3. TRADEMARKS

Trademark costs incurred by the Academy are amortized over fifteen years. Trademarks costs at December 31, 2015 and 2014 totaled $9,978 and $8,475, respectively, and consist of the Academy's trade name and publications. Accumulated amortization at December 31, 2015 and 2014 totaled $787 and $197, respectively. Amortization expense for the years ended December 31, 2015 and 2014 was $590 and $1,038, respectively.

4. COMMITMENTS

During the year ending December 31, 2013, the Academy relocated its headquarters to a new office space located in Annapolis, Maryland. The new office space is leased under an agreement dated July 2013 and calls for monthly lease payments of $3,728. The lease contains a 3% annual escalation clause and expires in July 2018. Future minimum lease payments required under this lease for the years ending December are as follows:

2016	$ 48,047
2017	$ 49,489
2018	$ 29,367
Total	$ 126,903

Rent expense under all operating leases for office space totaled $48,303 and $46,387 for the years ended December 31, 2015 and 2014, respectively and is included in office expense in the statement of activities.

5. RELATED PARTY TRANSACTIONS

The Environmental Engineering Foundation, Inc. (the Foundation, a 501(c)(3) nonprofit organization, was formed to support the operations of the Academy. The Academy manages the finances of the Foundation, including the collection of donations made to the Foundation. Periodically, funds collected on behalf of the Foundation are transferred from the Academy to the Foundation. At December 31, 2015 and 2014 the balance of funds held on behalf of the Environmental Engineering Foundation, Inc. was $3,710 and $1,870, respectively.

The Academy also charges the Foundation an annual administrative support fee. Total administrative support fees for the years ending December 31, 2015 and 2014 was $1,800 a year, and is included in other income in the statement of activities and changes in net assets. At December 31, 2015 and 2014 the Academy was owed $3,672 and $900, respectively, in administrative support fees and reimbursable expenses from the Foundation.

6. EMPLOYEE BENEFIT PLAN

The Academy established a 401(k) Retirement Plan in 1997 for all employees meeting certain eligibility requirements. Employees may contribute up to 15% of their eligible compensation to the plan, subject to the limits of Section 401(k) of the Internal Revenue Code.

Exhibit C

Statements of Cash Flows
For the Years Ended December 31, 2015 (Audited) and 2014 (Reviewed)

	2015	2014
Cash Flows from Operating Activities		
Change in Net Assets	$ 4,942	16,263
Adjustments to Reconcile Change in Net Assets to Net Cash Provided by Operating Activities:		
Depreciation and Amortization	5,617	5,675
Loss on Disposal of Property, Equipment, and Trademarks		3,277
(Increase) Decrease in Operating Assets:		
Accounts Receivable	(10,486)	(454)
Prepaid Expenses	(20,822)	16,353
Increase (Decrease) in Operating Liabilities:		
Accounts Payable and Accrued Expenses	(3,161)	(4,484)
Due to the Foundation	1,840	(615)
Deferred Revenue	79,088	6,197
Net Cash Provided by Operating Activities	57,018	42,212
Cash Flows From Investing Activities		
Purchase of Property, Equipment, and Trademarks	(1,503)	(10,480)
Net Increase in Cash and Cash Equivalents	55,515	31,732
Cash and Cash Equivalents - Beginning of Year	208,854	177,122
Cash and Cash Equivalents - End of Year	$ 264,369	$ 208,854

The Accompanying Notes to Financal Statements Are an Integral Part of These Financial Statements

The Academy does not match employee contributions.

7. CONCENTRATIONS

At various times during the years ended December 31, 2015 and 2014, the Academy maintained operating cash and cash equivalent balances in excess of the federally insured limits. Total uninsured operating cash and cash equivalents was approximately $9,500 at December 31, 2015. There were no amounts in excess of the federally insured limits at December 31, 2014.

8. UNRESTRICTED NET ASSETS - BOARD DESIGNATED

It is the policy of the Board of Trustees to the Academy to review its plans for future projects from time to time and to designate appropriate sums to assure adequate financing of such projects.

Kappe Fund - represents a $10,000 bequest received for the Estate of Stanley E. Kappe during 1985. The unrestricted bequest is used for the purpose of recognizing the contributions of Stanley E. Kappe to the environmental engineering profession. The Board has designated the fund as a Quasi-Endowment. Hence, the principal portion of this fund is to remain intact and the interest can be spent on funding the Kappe Lecture Series. The Board has also designated additional funds and any annual contributions to the Kappe Lecture to be used to fund the Kappe Lecture Series. Total designated funds as of December 31, 2015 and 2014 amounted to $16,709. The Academy does not currently maintain a separate bank account for these funds.

9. SUBSEQUENT EVENTS

Management has considered and evaluated subsequent events through April 1, 2016, the date of the financial statements were available to be issued.

2017 Election Results

The ballots have been counted. The results will be official after the Teller's Report is confirmed by the Board of Trustees at the 2016 Annual Meeting. The following individuals have been elected for 2017:

- President-Elect, **Robert C. Williams**, will succeed to the office of President.
- **C. Hunter Nolen** will be President-Elect.
- **Kristin Morico** will be Vice President.
- **David M. Gaddis**, **Jeffrey H. Greenfield**, and **Wendy A. Wert** have been elected as Trustees-at-Large.

AAEES thanks the 2017 Election Teller's Committee for taking the time to tabulate the votes: **Christian Davies-Venn**, Ph.D., P.E., BCEE, **Edward P. Hagarty**, Sc.D., P.E., BCEE, and **David J. Kerr**, P.E., BCEE.


Robert C. Williams


C. Hunter Nolen


Kristin Morico


David M. Gaddis


Jeffrey H. Greenfield


Wendy A. Wert

ACADEMY NEWS

AAEES AT WEFTEC 2016

AAEES will be exhibiting again at WEFTEC 2016 being held September 26-28, 2016, in New Orleans. If you are attending, stop by Booth 2864 to say hello. If you would like to sign up as an official Academy booth spokesperson, email Sammi at JSOlmo@aaees.org. Not only will you get a chance to promote the Academy, but you will also find yourself making connections that are made possible only through your participation in the booth. Being there adds to your WEFTEC experience. We look forward to your joining the AAEES WEFTEC team!

All are also invited to attend the AAEES Breakfast on September 26. This year's breakfast is at 7:00 am at the New Orleans Morial Convention Center. The Keynote Speaker is James R. Mihelcic, Ph.D., BCEEM, Samuel L. and Julia M. Flom Professor & State of Florida 21st Century World Class Scholar, University of South Florida. Earn one Academy PDH for attending. Register online at www.weftec.org.

2017 SPECIALTY CERTIFICATION RENEWALS

The 2017 Specialty Certification Renewal cycle will be underway beginning in September. Notices will be emailed to all Board Certified Individuals. If you did not renew for 2016, please contact Joyce at JDowen@aaees.org or log in to the AAEES Center to renew online.

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**. If you want to toot your own horn, or someone else's, here are two ways to do it:

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 nomination for **Volunteer of the Month**. Email the 350-word nomination to YMoulden@aaees.org.

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 provide a vehicle for learning about the outside interests of your colleagues. Email your submissions to YMoulden@aaees.org for a chance to be featured in a future issue of *Environmental Engineer and Scientist.*

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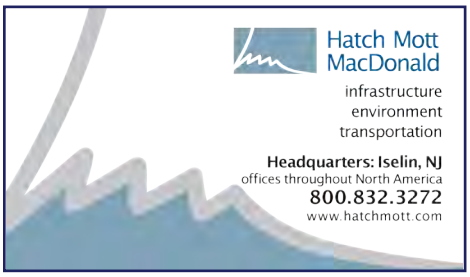

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The American Academy of Environmental Engineers and Scientists identifies highly skilled environmental engineers and environmental scientists for the benefit of the public. These unique professionals are readily recognized through Academy credentials:
Board Certified Environmental Engineer (BCEE) and Board Certified Environmental Scientist (BCES).

Those with a degree in environmental engineering (or related engineering degree), at least 8 years of experience, and a P.E. license may qualify to take written and oral specialty examinations to obtain the BCEE credential.

Those with a degree in environmental science (or related science degree) and at least 8 years of experience may qualify to take written and oral specialty examinations to obtain the BCES credential.

Federal, state, and local agencies, educational institutions, and consulting firms recognize individuals holding Academy credentials as trustworthy, ethical experts with a strong commitment to protecting public health and the environment through their leadership and excellence in the practice of environmental engineering and science.

For more information, go to http://www.aaees.org and click on Become a Member.

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