

# AEESP Newsletter

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## AEESP Newsletter Submissions

Please send news, conference announcements, job postings, letters to the editor, and other contributions to the newsletter to Upal Ghosh at [ughosh@umbc.edu](mailto:ughosh@umbc.edu). The next newsletter will appear in September 2014.

## President's Letter

### Announcing the Steven K. Dentel AEESP Award for Global Outreach

Submitted by JENNIFER BECKER  
(MICHIGAN TECHNOLOGICAL  
UNIVERSITY)

AEESP has long had in place awards that recognize the achievements of individuals in the environmental engineering and science academic community in the areas of research, teaching, and engineering practice, as well as student awards for the best M.S. theses and Ph.D. dissertations. However, in addition to teaching, research, and professional service, many AEESP members are increasingly engaged in global outreach activities. In many cases, this work has very significant and positive impacts on the lives of the many individuals in developing countries who lack access to clean and reliable water, basic sanitation, dependable and safe sources of energy, and other basic needs. AEESP has had no award to recognize this very meaningful work. Last summer, the AEESP Board of Directors, in consultation with the AEESP Foundation Board of Directors, resolved to create such an award and name it after one of AEESP's most accomplished and respected members who has made outstanding contributions to global outreach.

Thus, on May 1, 2014, Mark Wiesner and Joel Burken, the two most recent Past-Presidents



From left to right, current AEESP President Jennifer Becker and Past Presidents Mark Wiesner and Joel Burken look on as Steve Dentel makes his remarks after receiving the inaugural Steven K. Dentel AEESP Award for Global Outreach. Photo courtesy Doug Baker, University of Delaware



Steve with the inaugural award. Photo courtesy Doug Baker, University of Delaware

of AEESP, and I had the distinct honor of announcing the creation of the Steven K. Dentel AEESP Award for Global Outreach. The purpose of this new award is to recognize outstanding contributions and leadership by a faculty member through involvement in environmental engineering and science outreach activities to the global community. The award is also given in honor of Steve and his many outstanding contributions to AEESP and the greater environmental engineering community. Mark, Joel, and I also recognized Steve as the inaugural recipient of the Steven K. Dentel AEESP Award for Global Outreach during a presentation at a benefit dinner for the University of Delaware Engineers Without Borders (EWB) chapter. Being able to announce and present this award among some of the students who have benefited from Steve's mentoring and leadership in global outreach made this an especially rewarding event!

Steve's numerous contributions to the environmental engineering field have been made over an extremely productive and successful 30-year period, and I highlight some of Steve's global outreach activities and contributions to AEESP below. Steve has been an exceptionally dedicated and successful faculty advisor to the University of Delaware chapter of EWB, since it

continued on next page



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### *President's Letter, continued from page 1*



*The village of Bakang II, Bamendjou, Cameroon honors Steve in a special ceremony. Photo courtesy Steve Dentel*

was formed in 2006. He has led eleven trips to Cameroon where the EWB students completed a series of projects that led to the development of reliable and potable water supplies for two villages. The system, which was completed last year, provides each villager with up to 10 L of clean drinking water per day from convenient locations. It is estimated that the design and construction of this successful project would have cost millions of dollars had it been completed by a contractor. Over the years, Steve and the EWB students formed a special bond with the villagers, and as a testament to that, the village of Bakang II, Bamendjou, Cameroon made Steve a "Prince and Village Notable" in a special ceremony. Under Steve's leadership, the University of Delaware-EWB chapter completed a second project, recently initiated a third project, and has become one of the most visible and impactful student groups on campus. Steve also received funding from the Gates Foundation via its Grand Challenges Exploration Fund to evaluate the use of water permeable membranes as liners for latrines to prevent the migration of pathogens into the soil while allowing water infiltration. Because of promising initial results, the project received additional Phase II funding from the Gates Foundation, and a full-scale pilot study is planned in India in the near future.

Steve has been an active member of AEESP throughout his academic career and was elected to the AEESP Board of Directors in 2009. He served as Secretary of the AEESP

Board of Directors from 2010 to 2012 and as Secretary of the AEESP Foundation Board of Directors from 2012 to 2013. AEESP has been extremely fortunate to have had numerous Board members who were willing to devote many hours to doing the Board's work, in addition to the time they devote to their research, students, teaching, and other professional obligations. However, even among this cohort of dedicated individuals, Steve's service and contributions were nothing short of exemplary. He approached all of his work on the AEESP and AEESP Foundation Boards with thoughtfulness and diligence, as I suspect he does every aspect of his work and life. He also brought to our meetings a wonderful dry sense of humor and unerring sense of diplomacy.

Despite Steve's willingness to give so much time and effort to global outreach efforts via EWB and to AEESP (and other professional societies), he also is a prolific and successful researcher. He began his research career working in the area of coagulation and destabilization phenomena and water treatment processes. In more recent years, Steve has established himself as one of the nation's foremost experts in the area of biosolids management and treatment. In addition, Steve played an instrumental role in the creation and success of the environmental engineering B.S. program at the University of Delaware.

Steve has been an exemplary model and has set the standard for what global outreach leadership means to the environmental engineering and science community. Because of his conscientious nature, and the high standards of conduct that he holds himself to in everything he does, Steve has also set for the rest of us, a very high standard of professionalism and collegiality, and he has done so with humility and good humor. Steve gives his utmost to his work, wherever it takes him. He inspired the AEESP Board of Directors and AEESP Foundation to name this award in his honor. I hope that in the coming years, you will also be inspired to nominate a deserving colleague for the Steven K. Dentel AEESP Award for Global Outreach or another prestigious AEESP Award.

In the mean time, keep up the good work that you all do for the environment and for the world's population, wherever that work takes or leads you.

## Final Distinguished Lecturer's Report

Submitted by MARK C.M. VAN  
LOOSDRECHT (PROFESSOR OF  
ENVIRONMENTAL BIOTECHNOLOGY  
DELFT UNIVERSITY OF TECHNOLOGY  
THE NETHERLANDS)

In the academic year 2013/2014, I made 16 official visits, distributed over three legs, as my Distinguished Lecturer Tour. In addition, I gave unofficially the same lectures at Columbia University in New York and KAUST at Jeddah. Table 1 summarizes the dates, host school, other schools involved, and the lecture(s) given for each stop on the tour.

I offered two main lectures: "Resource Recovery: Waste Based Biorefineries" and "Aerobic Granular Sludge". The host schools could also ask for a lecture on Anammox Technology or Innovations in Wastewater Treatment. The topic of Resource Recovery was clearly the most popular, mainly because it was appealing to the broad staff at the universities.

As indicated in Table 1, many stops involved major participation by two or more universities. The stop at Yale University turned out to coincide with an ABET evaluation minimizing participation from close by universities. The University of South Florida and colleagues organized around the lecture a forum discussion on nutrient management in Tampa Bay and a lively poster session with around 45 posters by PhD students from the participating universities. In my view, this was a good example for other universities. The USF was most active in using twitter around the lecture.

At the universities of South Florida, Wyoming and Illinois, I gave an extra lecture during the regular classes to graduate students. I have the impression this was well appreciated by the students. At the University of Illinois at Urbana-Champaign, I had extensive meetings with the PhD students which was also interesting for me with respect to getting an overview of the ongoing research. In general the interactions with graduate and post graduate students at all the schools was appreciated.

**Table 1 - Summary of 2013-14 Distinguished Lecturer Tour**

| Stop No. | Dates      | Host School                                | Other Schools  | Lecture                       |
|----------|------------|--|--|-------------------------------|
| 1        | Oct. 13-16 | Columbia University*                       | City College NY  | Resource Recovery             |
| 2        | Oct. 17-19 | Cornell University                         | Clarkson University  | Innovation                    |
| 3        | Oct. 20-21 | Yale University                            | University of Connecticut; University of Massachusetts             | Resource Recovery             |
| 4        | Oct. 22-23 | Duke University                            | University of North Carolina; North Carolina State University      | Resource Recovery**           |
| 5        | Oct. 24-25 | Virginia Tech                              | VT Northern VA Campus  | Aerobic Granular Sludge       |
| 6        | Oct. 26-28 | Johns Hopkins University                   | University of Maryland College Park; UMB; Howard University        | Anammox**                     |
| 7        | Oct. 29-31 | Georgia Tech                               | Clemson University; Auburn University                              | Resource Recovery**           |
| 8        | Jan. 26-29 | University of South Florida                | University of Florida; University of Central Florida               | Resource Recovery; Anammox    |
| 9        | Jan. 30-31 | Texas A&M                                  | Rice University; University of Texas Austin; University of Houston | Aerobic Granular Sludge       |
| 10       | Feb. 1-3   | Wyoming University                         |  | Resource Recovery; Anammox    |
| 11       | Feb. 4-5   | University of Washington                   |  | Aerobic Granular Sludge       |
| 12       | Feb. 6-8   | University of California Berkeley          | Stanford University  | Resource Recovery**           |
| 13       | Mar. 16-19 | University of Illinois at Urbana-Champaign |  | Innovation; Resource Recovery |
| 14       | Mar. 20-22 | Carnegie Mellon University                 | University of Pittsburgh   | Resource Recovery             |
| 15       | Mar. 23-24 | University of Wisconsin-Madison            | Marquette University; University of Wisconsin Milwaukee            | Resource Recovery             |
| 16       | Mar. 25-26 | Michigan State University                  | University of Michigan; University of Toledo                       | Resource Recovery             |
| 17       | Mar. 27-28 | University of Notre Dame                   | Illinois Institute of Technology; Purdue University                | Resource Recovery             |

Notes:

\* Similar Lecture, but outside the official AEESP tour

\*\* Lecture recorded and shown at nearby Universities



## Final Distinguished Lecturer's Report *continued from page 3*

### My Impressions

Being the AEESP Distinguished Lecturer was a wonderful experience for me. I had an interesting time meeting AEESP colleagues, new and old to me. Most schools provided me an opportunity to meet intensively with students, and this was often the highlight of the visit. I recommend that host schools provide substantial opportunities for the Lecturer to meet with students. I also gained a lot of insight by seeing the laboratories and other facilities for so many different programs. It underlined the diversity of environmental engineering and science as a discipline. Finally, I had the chance to tell people about my research.

Being away for effectively almost three months from my home university was no problem.

The tours could be scheduled in between my lecturing duties at Delft. The time difference with Europe meant that in the morning before breakfast, I could handle most of the issues at home by e-mail. Overall the program at the host universities was relaxed and not too demanding, allowing me to spend time and energy on handling these 'home-affairs'. On balance, the benefits definitely outweighed the hassles. I would do the lectureship again, and I will encourage others to take it on.

Based on my visits, I conclude that the state of environmental engineering and science in academy is "strong" and "full of energy". I was very positively impressed by the energy and research activity at almost every university I visited. Coming from Europe I notice that most research is occurring in smaller teams

than usually occurring in Europe whereas the interdisciplinary interaction between research teams seemed less (albeit also in Europe this is not strong as well). The environmental engineering programs are quite variable between the different schools, likely depending on history (civil or chemical engineering background). All had a substantial amount of chemical and biological based research. Several topics seemed to be worked on throughout the country (disinfection by-products, emerging pollutants as well established areas; methanation and sanitation in developing countries as emerging topics). Compared to European research, the attention for nutrient removal and wastewater treatment in general is much lower.

## New AEESP Board Members

Submitted by JENNIFER BECKER (MICHIGAN TECHNOLOGICAL UNIVERSITY AND AEESP PRESIDENT AND BOARD MEMBER)

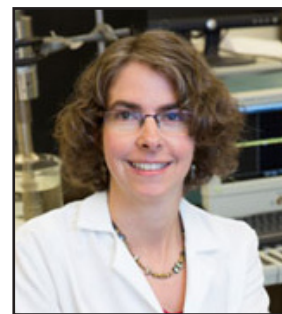
The AEESP Board of Directors is pleased to announce the results of the election for three new members. Serving three-year terms beginning September 2014 are: Dionysios (Dion) D. Dionysiou, University of Cincinnati; Cindy M. Lee, Clemson University; and Linda Weavers, The Ohio State University. The Board congratulates its newest members and looks forward to their contributions!



Dionysios (Dion) D.  
Dionysiou



Cindy M. Lee



Linda Weavers

We sincerely appreciate the willingness of all of the candidates for the Board of Directors to serve AEESP. Thanks are also due to all AEESP members who took the time to vote in this year's Board of Director's election. If you did not get the chance to vote this year, we hope that will be able to participate in this important activity in future years!

## Online Academic Job Application Review Program for Graduate Students and Postdoctoral Researchers

Submitted by PHILIP LARESE-CASANOVA (NORTHEASTERN UNIVERSITY) on behalf of the STUDENT SERVICES COMMITTEE

The AEESP Student Services Committee is pleased to announce this year's Academic Job Application Review Program to take place in Summer 2014. The Program will link student and postdoctoral researchers who are interested in applying for academic jobs with faculty members who will provide individualized advice to strengthen academic job applications. Approximately 100 students and post

doctoral scholars benefited from this Program over the past three years. This year's Program will be conducted entirely online through email, phone, or teleconference correspondence. Student participants will interact with professors from different institutions to receive comments on their draft documents that comprise an application for a faculty position as well as to get perspectives on job expectations.

At this time, the Committee is opening registration to graduate students and postdoctoral researchers and soliciting faculty members to serve as volunteer Reviewers. Program registration is limited to 40 participants with application packages. All interested students, postdocs, and Reviewers are asked to email the Committee (acad\_job\_review@aeesp.org) by July 1, 2014 in order to register for the Program. Application packages will be due July 28, and reviews will take place during August.

## 2014-15 AEESP Distinguished Lecturer: Bruce E. Logan

Submitted by JEANINE PLUMMER (WORCESTER POLYTECHNIC INSTITUTE)

Professor Bruce E. Logan is an Evan Pugh Professor, the Stan & Flora Kappe Professor of Environmental Engineering, and Director of the Engineering Energy & Environmental Institute at Penn State University. His current research efforts are in bioenergy production and the



Professor Bruce Logan

development of an energy sustainable water infrastructure. Dr. Logan has mentored over 110 graduate students and post docs, and is the author or co-author of over 380 refereed publications (h-index = 91) and several books. He is the founding Deputy Editor of the new ACS journal *Environmental Science & Technology Letters*, and a member of the US National Academy of Engineering (NAE), and a fellow of AAAS, the International Water Association (IWA), the Water Environment Federation (WEF), and the Association of Environmental Engineering & Science Professors (AEESP). Dr. Logan is a visiting professor at several universities including Newcastle University (England) and Tsinghua University (China), with ties to several other universities in Saudi Arabia, Belgium and China. He received his Ph.D. in 1986 from the University of California, Berkeley. Prior to joining the faculty at Penn State in 1997, he was on the faculty at the University of Arizona.

Dr. Logan will offer the following lectures during his tour:

- Lecture 1: Microbial Fuel Technologies for Renewable Power and Biofuels Production From Waste Biomass
- Lecture 2: Energy Generation from Water: Just Add Salt

Lecture tour dates will be scheduled from September 2014 through April 2015. Further descriptions of these talks and host applications are available on the AEESP Foundation website. Applications were due May 14, 2014.

## Content, Proposals for Special Issues Sought for Environmental Engineering Science Journal

Submitted by DOMINIC GRASSO (EDITOR, ENVIRONMENTAL ENGINEERING SCIENCE)

Dear Colleagues,

As you know, *Environmental Engineering Science* (EES) is the official journal of AEESP. EES publishes high-quality refereed, full-length articles, shorter communications, review articles, and letters to the editor. In general, full-length submissions should not exceed 8000 word-equivalents in length, however, exceptions can be requested. The average time to a first decision is typically less than 30 days and EES publishes about 14% of submitted manuscripts.

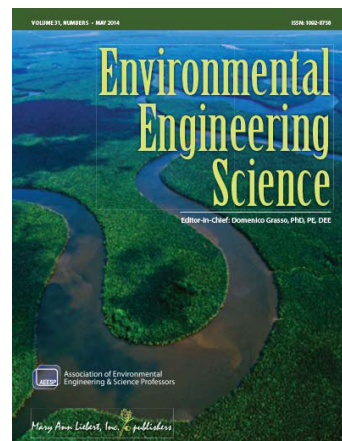
It is also my pleasure to update you on some significant special issues that will be forthcoming in EES. We are currently putting the final touches on an issue focused on Environmental Nanotechnology, edited

by Mark Wiesner at Duke and that will be published by early summer.

A bit further into the future EES will be assembling and publishing a special issue on Natural Organic Matter from the Suwannee River, Georgia (USA): Properties, Reactivity, and Effects of Processing Methods, edited by Patricia Maurice at Notre Dame.

I invite you to consider preparing proposals for future special issues or submitting your best individual work to EES and help make our journal an outstanding venue for AEESP member publications.

Visit [www.liebertpub.com/ees](http://www.liebertpub.com/ees) for complete manuscript submission guidelines and formatting instructions.



## University of New Mexico receives NSF Center Grant

Submitted by KERRY HOWE (UNIVERSITY OF NEW MEXICO)

The Center for Water and the Environment at the University of New Mexico has been awarded a 5-year, \$5 million Center for Research Excellence in Science and Technology (CREST) grant from the National Science Foundation. The Center's research program is focused on problems related to water availability in arid environments and in times of drought, and problems at the intersection of water and energy generation and consumption, in light of the criticality of these issues to the state of New Mexico, the southwestern United States, and their global importance. In particular, the Center will be conducting research on:



Kerry Howe

- Watershed management, considering drought, climate change, hydrologic processes, and nutrient processing.
- Potable water reuse and brackish groundwater treatment with membrane technologies.
- Removal of nutrients and micropollutants from wastewater using biofilm-based technologies.
- Impacts of uranium mining and/or hydrofracturing on groundwater resources.
- The effects of uncertainty in environmental decision-making.

In addition to this research program, the Center will have substantial outreach and recruiting activities in alignment with the CREST program's focus on increasing the participation of underrepresented minorities in science and engineering. Among other things, the recruiting and outreach programs will include:

- The development of a mobile, trailer-mounted demonstration unit called the Water Activity Vehicle and Experience (WAVE), which will allow K-12 students and the community to experience and understand water-related research in a hands-on way.
- The development of a dual-enrollment course in sustainability and water engineering that will be offered to Albuquerque high school students, allowing them to receive both high school and college credit.
- The development of a two-week summer field class offered to incoming freshmen and transfer students, to allow students to experience field and laboratory research on a water-environmental topic.

Dr. Kerry Howe is the Center Director. Additional participants in the Center include environmental and water resources engineering faculty Andrew Schuler, Bruce Thomson, Mark Stone, José Cerrato, Ricardo González-Pinzón, and Julie Coonrod, in addition to faculty from other disciplines.

Students interested in graduate research assistantships, particularly those from underrepresented minorities in STEM, should contact Kerry Howe at [howe@unm.edu](mailto:howe@unm.edu).

## Daniel Oerther on Jefferson Science Fellowship, US Department of State

Submitted by DANIEL OERTHER (MISSOURI UNIVERSITY OF SCIENCE AND TECHNOLOGY)

From August 2014 through July 2015, Daniel B. Oerther, the John A. and Susan Mathes Chair of Environmental Engineering at the Missouri University of Science and Technology, is serving as a Jefferson Science Fellow (JSF). Established in 2003 by Secretary of State Colin Powell, the purpose of the Fellowship is to articulate "accurate science for statecraft" to policy makers to establish effective relationships in the 21st century promoting democracy, security, and prosperity around the globe.



Daniel Oerther

Oerther previously served as a Fulbright-Nehru Scholar to the Indian Institute of Science, a Fulbright-Pai Endowed Scholar to Manipal University (India), and most recently as the inaugural Fulbright-ALCOA endowed chair in environmental science and engineering at the University of Western Para, Brazil.

To learn more about Oerther's experiences as a JSF check out [danieloerther.wordpress.com](http://danieloerther.wordpress.com), and to learn more about Fellowship opportunities from the U.S. Department of State check out <http://careers.state.gov/professional-fellowships>. Dan is happy to help answer questions you may have about applications or strategies for making service at the U.S. Department of State part of your professional development.



## In Memoriam

Submitted by LINFIELD C. BROWN (PROFESSOR EMERITUS, DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING, TUFTS UNIVERSITY)

N. Bruce Hanes, PE, BCEE, M.ASCE, legacy member of AEESP and Emeritus Professor of Civil and Environmental Engineering at Tufts University, passed away suddenly on April 21, 2014.

Born in Minot, ND, Bruce graduated from North Dakota State University in 1954 with his BS in Civil Engineering. Coming from a farming background, his interest in civil engineering was directed toward the environment. In the fall of 1954 he received a University Fellowship and enrolled in a Master's program in civil engineering at the University of Wisconsin-Madison. The Wisconsin faculty liked what they saw and hired him as a full time instructor while he completed his Masters. He then took a teaching position at Montana State College in Bozeman, where during the summers he worked at the State Department of Health as a Sanitary Engineer. This experience kindled an interest in water microbiology and public health, spurring him to return to Madison in 1959 to pursue a Ph.D., which he obtained in 1961.

Bruce and his family then moved to Massachusetts to join the Tufts community, where his charge was to develop a program in environmental engineering. This past fall marked the 50th anniversary of Tufts School of Engineering's environmental health engineering program, which Bruce initiated. He successfully secured one of the first environmental engineering graduate traineeship grants from the Federal Water Pollution Control Administration, the predecessor of the U.S. Environmental Protection Agency. Building on that success, Bruce won a similar training grant in environmental health from the U.S. Public Health Service. Bruce was an active lobbyist for these federally funded training grant programs, testifying before multiple congressional committees as an advocate for the education of environmental engineering and health professionals.

Bruce's research centered on water quality and environmental engineering. His pioneering investigations on the incidence and occurrence of microbial indicator organisms used to evaluate drinking- and bathing-water quality formed the basis for EPA standards and regulations. Bruce also was cognizant of the impact of research on a local level. He initiated the formation of the Aberjona River Commission to develop reports on the point and non-point sources of pollution in the river that runs through the northwestern suburbs of Boston. These early studies on contamination, including pervasive carcinogens from various industrial sites, led to increased scrutiny of this area and ultimately resulted in one of the largest environmental remediations in the northeastern United States as described in the book, *A Civil Action*, by Jonathan Harr.

Bruce was a life-long member of AEESP and its predecessor organizations AAPSE and AEPP, in which he served in many capacities through the years, including Committee on Research, Chairman of

the Education Training Committee, Chairman of the Committee on Legislative Analysis and Training Support, Board of Directors, Secretary, Treasurer, Vice-President and President. He also served as chair of the New England Interstate Water Pollution Control Commission and was elected president of the American Academy of Environmental Engineers. Bruce was a consultant to the Environmental Protection Agency, the Soap and Detergent Association, the United States Public Health Service, the National Science Foundation, the National Council for Air and Stream Improvement of the Pulp and Paper Industry, the Commonwealth of Massachusetts, and the community of Winchester, MA.



N. Bruce Hanes

In 1969, Bruce was appointed CEE department chair at Tufts and served for 12 years. During this time, he was instrumental in developing the Tufts joint master's program in engineering and public policy. Bruce also fostered the growth of the interdisciplinary undergraduate environmental studies program and the establishment of the Tufts Center for Environmental Management. As a member of the ABET Board of Directors, he worked diligently to incorporate health and safety topics into engineering design courses and refine the criteria used to evaluate environmental engineering programs accredited by ABET, Inc. His leadership contributed to the department's official name change from "Civil Engineering" to "Civil and Environmental Engineering" in 1993 and the subsequent accreditation of the Bachelor of Science in Environmental Engineering in 1995. Bruce retired from Tufts receiving the Seymour O. Simches Award for Distinguished Teaching and Advising, after 31 years with the department.

After retiring from Tufts Bruce continued to enjoy a full and active life. As was evident in his annual holiday greeting cards, he loved to travel, blending trips to see family and friends, attending antiques shows and professional meetings, and many of the usual tourist sites. Though he had officially left Tufts, Bruce never truly left the department. He faithfully attended the annual Tufts CEE Alumni and Student Awards Dinner and continued to mentor students and faculty in the department. In 1994, Bruce received the Centennial Award for Distinguished Professional Service that marked the 100-year anniversary of the School of Engineering. In 2013, his undergraduate alma mater inducted him into the Sigma Alpha Epsilon - North Dakota Beta Chapter Hall of Fame in recognition of his career and personal achievements and service to the community of alumni and friends.

Bruce will be remembered for his personal warmth, generosity, encouragement, and friendliness. He will be admired for his advocacy for environmental engineering education, his commitment to public and professional service, and as an exemplary educator of scores of leaders in environmental engineering and health. We would do well to emulate his example: to see the best in people, to view change as opportunity, and to risk innovation by investing in people and programs.

*continued on next page*

*In Memoriam* continued from page 7

Bruce was predeceased by his first wife, Loretta (Lorry) Bye of 50 years and is survived by his wife Dorothea Hanes of eight years; five children: Cherie Baughman, Vicki Siarnacki, N. Bruce Hanes Jr., Thomas Hanes, and Gregory Hanes; three step children: Lameece Gregorchik, Nadia Innes, and Mona Johnson; thirteen grandchildren; and six great grandchildren.

A service celebrating his life will be held in mid-summer in Gibsonville, NC. Memorials may be made to the Department of Civil and Environmental Engineering, 200 College Ave, 113 Anderson Hall, Tufts University, Medford, MA 02155 or the Department of Civil and Environmental Engineering, Civil Engineering, NDSU Dept. 2470, PO BOX 6050, Fargo, ND 58018-6050

## 2014 University Awards from the American Academy of Environmental Engineers & Scientists (AAEES)

Submitted by JAMES R. MIHELIC (UNIVERSITY OF SOUTH FLORIDA)

On April 24, 2014 at the National Press Club in Washington D.C. the American Academy of Environmental Engineers & Scientists presented several awards to students and faculty colleagues. The first three awards described below are co-judged by a committee made up of an equal number of members of AAEES and AEESP. You can read more about the AAEES 2014 awards at: <http://www.aaees.org/>



Abhinav Gupta

The 2014 William Brewster Snow Award was presented to Mr. Abhinav Gupta. This AAEES award is given to an outstanding environmental engineering student who is currently pursuing or has recently completed a Master's degree in Environmental Engineering or closely related degree program. Abhinav has a BS from the Indian Institute of Technology, Kanpur and was awarded an MS degree in Civil Engineering from Virginia Tech. He was advised by Dr. John Novak. Mr. Gupta is currently employed as a Process Technology Development Engineer with Intel at their state-of-the-art semiconductor manufacturing factories in Oregon. He is a lead or co-author of several peer reviewed publications that have appeared in the *Journal of Hazardous Materials* and *Chemosphere* and he also presented his research at WEFTEC in October 2013. His MS research provided critical information on countermeasures to solve UV quenching issues encountered at publicly-owned treatment works (POTWs) that accept landfill leachates. His accomplishments as a student have been recognized with the Paul E. Torgersen Research Excellence Award for Best Master's thesis in the College of Engineering at Virginia Tech, the Best Graduate Student paper award at the World EWRI Congress'13 (Cincinnati, OH), and the VA Water Environmental Federation's Sonny Roden Memorial Scholarship.

Dr. William Brewster Snow was on the organizing committee for the First and Second Southern Municipal and Industrial Waste Conferences and spoke at the first conference in 1953 with a paper on "The Biochemical Oxygen Test as an Indicator of Pollution." Throughout his career he had an enduring interest in the education of undergraduate and graduate engineers. For him, building tomorrow's engineers was more important than research.



Maureen Kinyua

The 2014 W. Wesley Eckenfelder Graduate Research Award was presented to Ms. Maureen Kinyua. Maureen is a PhD student in Environmental Engineering at the University of South Florida working under the supervision of Dr. Sarina Ergas. She has a BS in Civil and Environmental Engineering from North Dakota State University, and an MS in Environmental Engineering and a Graduate Certificate in Water, Health and Sustainability from the University of South Florida. Her research interests include waste-to-energy systems with particular focus to optimize biogas production while assessing management strategies for the effluent to reduce exposure to protozoan pathogens. She has published a paper titled "Effect of Solids Retention Time on the Bioavailability of Organic Carbon in Anaerobically Digested Swine Waste" that will soon appear in *Bioresource Technology*. Ms. Kinyua has also made presentations at the 2013 Water Environment Federation/International Water Association Nutrient Removal and Recovery Conference, AEESP 50th Anniversary Research and Education Conference, and the 22nd Annual Southwest Florida Water Resources Conference. She has volunteered with a group assisting Somali refugees and been actively involved in a number of professional engineering organizations, including ASCE, NSBE, SWE, and has been recently been active in an Engineers for a Sustainable World's Burkina Faso water supply project. She spent the past school year as a research assistant at the Institute of Chemical Technology, in Prague (Czech Republic) as part of a research exchange supported by an a European Union academic mobility scheme focused on Biological Waste-to-Energy Technologies (BioWET) and an NSF Partnership for International Research and Education (PIRE) grant.

The W. Wesley Eckenfelder Graduate Research Award is given annually by AAEES and is cosponsored by HDR Engineering to recognize a



student whose research contributes to the knowledge pool of wastewater management. Professor Wesley Eckenfelder Jr.'s contributions to environmental engineering included writing over thirty books, serving as a principal in several environmental engineering firms, and receiving twenty-eight awards from a wide range of professional societies. He was known internationally as an early developer and innovator of biological treatment technology that is now considered a standard practice employed by professionals worldwide.



*Daniel B. Oerther*

The 2014 Excellence in Environmental Engineering Education (E4) Award was presented to Dr. Daniel B. Oerther. Dr. Oerther is the John A. and Susan Mathes Chair of Environmental Engineering at the Missouri University of Science and Technology. He is also an Adjunct Professor of International Programs at the University of Western Para (Brazil) and in the fall will be serving as a Jefferson Fellow with the U.S. Department of State. Dr. Oerther has published more than 100 articles in the peer-reviewed archival literature and has been invited to deliver more than 100 lectures. He was a leader in the development and use of molecular biology tools to identify microbes in wastewater environments and disseminate that information to students and practitioners through a set of well attended workshops. He also led efforts to bridge research and practice by creating a new annual literature review in Water Environment Research entitled, "Molecular Methods in Biological Systems." Recently, Dr. Oerther has been engaged in teaching the next generation of engineering practitioners by engaging all engineering majors at the Missouri University of Science and Technology in an environmental engineering course that uses the AAEES Body of Knowledge to guide student learning. Dan has also inspired a new generation of young practitioners by his efforts to promote sustainability to future practitioners and applying his engineering skills in East Africa to help serve those without access to clean water and sanitation.

The Excellence in Environmental Engineering Education (E4) Award is given annually by AAEES to an individual who has made a significant contribution to the profession in the area of educating practitioners. Past Recipients have been Dr. John Novak and Dr. George Tchobanoglous.



*Debra Reinhart*

The 2014 Stanley E. Kappe Award was presented to Dr. Debra Reinhart. Dr. Reinhart is a Pegasus Professor and Assistant Vice President for Research and Commercialization at the University of Central Florida and a member of the Civil, Environmental and Construction Engineering Department. Dr. Reinhart's research area is solid waste management, with a focus on optimized waste collection and sustainable operation of landfills. She is an Associate Editor for the Waste Management

Journal, a member of the Managing Board of the International Waste Working Group, and a member of the Environmental Research and Education Foundation Board. She has served on the American Society of Civil Engineer's Report Card for America's Infrastructure Committee for the last three report cards. Dr. Reinhart has received national recognition from the National Aeronautics and Space Administration, AAEES, the Tech Museum of Innovation, Solid Waste Association of North America and others. She is a registered professional engineer in Florida and Georgia, a Board Certified Environmental Engineer, and Fellow of the American Society of Civil Engineers and the American Association for the Advancement of Science.

The 2014 Gordon Maskew Fair Award was presented to Dr. Perry McCarty. Dr. McCarty is the Silas H. Palmer Professor Emeritus at Stanford University. Dr. McCarty was elected to the National Academy of Engineering, the American Academy of Arts and Sciences, the American Academy of Microbiology, Distinguished Member of the American Society of Civil Engineers, and Honorary Member in the American Academy of Environmental Engineering and Science, the American Water Works Association, and the Water Environment Federation. He has received numerous awards, including the John and Alice Tyler Prize for Environmental Achievement in 1992, the Athalie Richardson Irvine Clarke Prize for Outstanding Achievements in Water Science and Technology in 1997, and the Stockholm Water Prize in 2007. He has over 350 publications, and is coauthor of the textbooks, *Chemistry for Environmental Engineering and Science*, and *Environmental Biotechnology - Principles and Applications*. He has served the profession broadly, including with numerous committees, boards, and commissions for the National Academies.



*Perry McCarty*

The 2014 Student Team Award was given to the EWB-USA Rice University Student Chapter for their project entitled "Water Supply Project for Lucinda Mantilla, Nicaragua." Engineers Without Borders worked with ENACAL, the national water company of Nicaragua, and residents of Matagalpa, a department in the northwestern portion of the country, to build a potable water system for some 450 residents of Lucinda Mantilla, an impoverished area in Matagalpa. The improvements included a pumping unit with an integrated control system that pumps water through some 400 meters of pipe to storage tanks. The water is then gravity fed directly to the taps of the Matagalpan residents.



*EWB-USA Rice University Student Chapter*

## ***EPA Funds Centers for Water Research on National Priorities Related to a Systems View of Nutrient Management***

*Submitted by* JAMES R. MIHELICIC (UNIVERSITY OF SOUTH FLORIDA)

### **Background**

The U.S. EPA has awarded Science to Achieve Results (STAR) grants to four research Centers across the country. These Centers will study new, sustainable ways to improve U.S. water quality degraded by nutrients. This is a high priority research area because clean water affects the Nation's health, economy, security and ecology. These Centers will consider a "systems view" of managing nutrients. A systems view uses social, technical and economic factors to determine success of nutrient management strategies across varied and broad geographic areas.

The four Centers are led by Colorado State University (CSU), Pennsylvania State University (PSU), University of South Florida (USF) and Water Environment Research Foundation (WERF). Many experts will work on these projects, including engineers, economists, soil scientists, ecologists and more. You can learn more by contacting Dale Manty, EPA's Office of Research and Development, [manty.dale@epa.gov](mailto:manty.dale@epa.gov).

### **Research Focus**

The Centers address three urgent research needs: (1) new science to create sustainable and affordable public health and environmental solutions in water management; (2) demonstration projects to support water management strategies with new and existing technology, including information at usable scales; and (3) community involvement in the design, acceptance and use of nutrient management systems. A short description of each Center (and the Director) is listed below, along with potential research impacts.

#### **Center for Comprehensive, Optimal and Effective Abatement of Nutrients (CSU: Mazdak Arabi)**

This Center focuses on tying together physical, biological, legal, social and economic factors of nutrient management in both the western and eastern U.S. It addresses sources of nutrients across the country, and the teams plan to study barriers to reducing these sources. Another goal is to increase the use of modeling in watershed decisions, including consideration of nutrient trading scenarios.

<http://erams.com/clean/>

#### **Center for Integrated, Multi-scale Nutrient Pollution Solutions (PSU: James Shortle)**

Centered in Pennsylvania and the Chesapeake basin, this Center's research focuses on the theme of nutrient flows. This includes a mass balance approach at the entire basin scale, bringing in nutrient flows from agricultural, rural, urban, municipal and atmospheric sources. It also highlights community engagement in several watersheds in the

Mid-Atlantic Region. Developing and testing a decision support tool that can be used across the country will be valuable across stakeholder groups.

#### **Center for Reinventing Aging Urban Infrastructure for Nutrient Management (USF: James Mihelcic)**

This project is focused on Tampa Bay but is similar to other coastal areas, which often share problems of aging wastewater and stormwater collection and treatment systems, rapid population growth and harmful impacts to water. Through strong community engagement, this Center addresses nutrient removal from point and diffuse urban waste streams across different scales (household to large centralized treatment). It also follows the pollution prevention hierarchy in terms of promoting particular strategies and considers social, economic, and environmental sustainability factors affecting adoption of new technologies.

<http://usf-reclaim.org/>

Other AEESP members participating include: Sarina Ergas, Maya Trotz, Qiong Zhang, Daniel Yeh, Jeff Cunningham, Allen Davis, Treavor Boyer, and Julie Zimmerman.

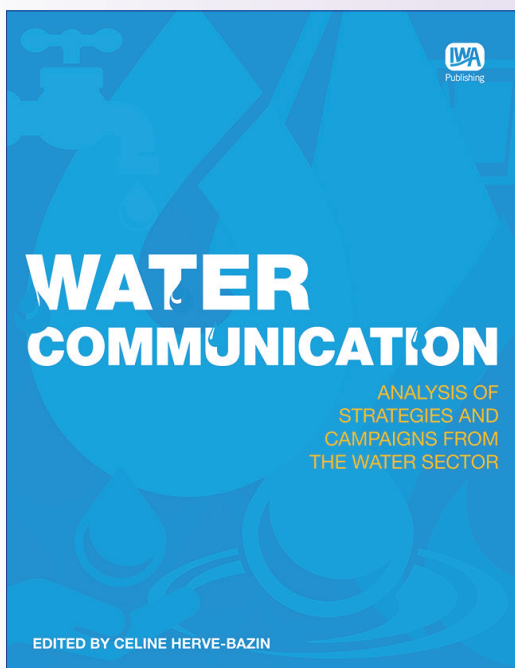
#### **National Center for Resource Recovery and Nutrient Management (WERF: Daniel Woltering)**

This Center builds on WERF's current research network by exploring new methods for nutrient reduction through re-source recovery and human behavior. One project will study urine-diversion, including nitrogen separation, recovery methods, and social aspects of new toilet technologies. Other projects will look at ammonia removal from wastewater streams and support evaluation of nutrient recovery from municipal, agricultural and industrial waste streams.

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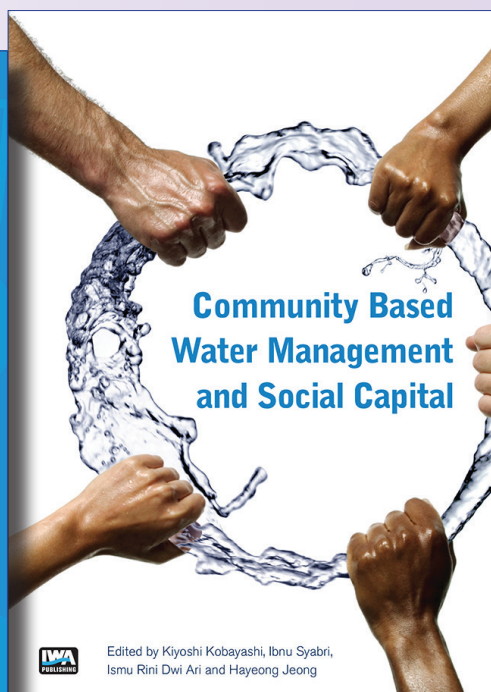
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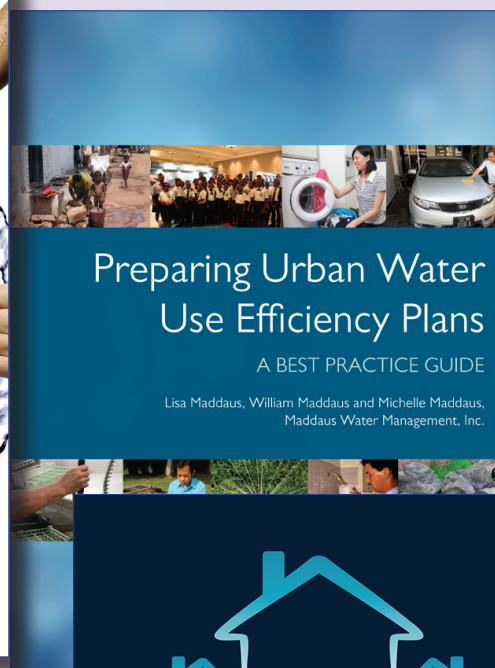


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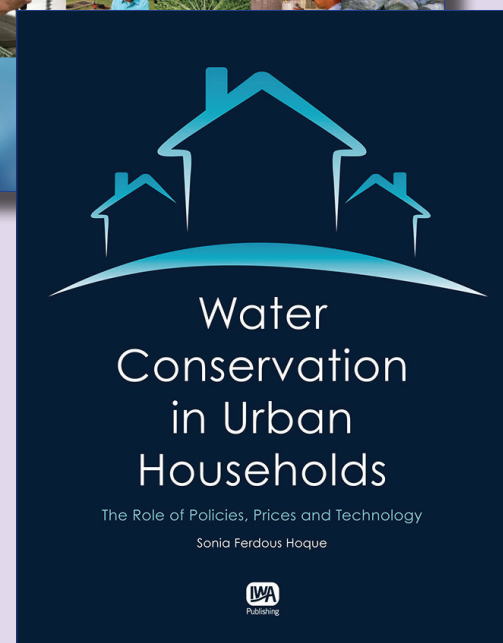
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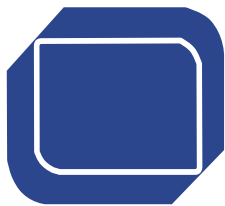
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