



AEESP Newsletter

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Want to go paperless for the AEESP Newsletter? If you wish to receive only the link for obtaining an electronic copy of the Newsletter, send a brief message to Joanne Fetzner at joanne@aeesp.org and we will remove you from the mailing list beginning with the September 2008 issue.

President's Letter

Environmental engineering is a distinct discipline

In 2006, engineers held approximately 1.5 million jobs in the United States. Environmental engineering ranked #8 in terms of the total number.

Environmental engineering is a distinct discipline. It is time for all of us to proclaim this to the world. You might want to practice first. I recommend you go for a walk and find that special place where you can raise your head high, and yell out "environmental engineering is a distinct discipline!" After you get good at it, then tell your dean, provost, and president. Of course you will want to tell your students. And importantly, tell the public, employers, and the government. And while you are at it, tell them of the importance and need for professionals with degrees in environmental science.

Why should we be so confident about this?¹

- Environmental engineering is a **recognized specialty** on professional engineering licensing exams.
- The U.S. Bureau of Labor Statistics counts **over 54,000 environmental engineers**² employed in the U.S. and Jones et al. (2005) reported the upper range may be as high as 100,000.
- As a profession, environmental engineering is **significantly larger** than biomedical, materials, and chemical engineering (which employed only

14,000, 22,000, and 30,000 engineers, respectively, in the U.S. in 2006).

- Environmental engineering is only one of two engineering disciplines which the U.S. Bureau of Labor Statistics predicts will have "much faster than average growth" over the next 10 years.
- The projected **25% growth in the number of environmental engineers to 68,000** by 2016 is the largest of any engineering discipline. In contrast, overall engineering growth will be 11%. The percent growth of some other engineering disciplines will be 21% for biomedical, 18% for civil, 8% for chemical, and 4% for materials engineering.



James Mihelcic

When I proclaimed this information to my university president, as expected, his response was one of surprise. But he wanted to learn more. Fortunately, I had practiced at that one special location, mine being a secluded wooded bluff overlooking a mix of open blue water and ice that covered an expanse of Lake Superior.

What does the future hold for our profession? Obviously we have challenges. We need to educate lots and lots of our constituencies about how our discipline is not only unique, but critical to the social and economic prosperity of our countries and the world. We also need to expand our interdisciplinary focus beyond our current partnership that is primarily environmental engineers and scientists. Environmental engineering

1 Sources (U.S. Bureau of Labor Statistics, <http://www.bls.gov/oco/ocos027.htm>; S. Jones et al., An Initial Effort to Count Environmental Engineers in the USA, Environmental Engineering Science, 22(6):772-787, 2005.

2 There are an additional 25,000 listed as health and safety engineers.

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AEESP Membership Application online:

www.aeesp.org/membership/AEESP_member_app.pdf



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AEESP Spring Board Meeting Highlights

Submitted by Peter Adriaens

The AEESP Board of Directors met at the University of Colorado at Boulder on March 6–7.

1. The membership of the Association is strong and healthy, as is traffic on its re-designed website. Membership is over 800, with 49 new members added in 2008. The Association is still experiencing a renewal rate of our members that is higher than many professional organizations. Our finances remain strong as well.
2. Our sustaining members have increased to 19, with the addition of LimnoTech, Brown & Caldwell, and Greeley and Hansen.
3. The AEESP Foundation is up and running and will now manage the donations for all AEESP awards. The Foundation Board will meet in May to discuss these issues and strategies for expanded fundraising activities.
4. The Board approved a proposal to sponsor a Plenary Lecture at the American Association for Aerosol Research (AAAR) annual conference.
5. The University of Iowa's proposal to host the 2009 AEESP Conference themed "Grand Challenges in Environmental Engineering and Science: Research and Education" was approved.
6. The next Board Meeting will take place at WEFTEC.08 in Chicago, IL. Members and their students are invited to meet Board members at the AEESP Meet and Greet on October 20.



Front row from left: Amy Childress, Joanne Fetzner, Jeanne VanBriesen, Angela Bielefeldt, Keri Hornbuckle, Peter Adriaens, and David Freedman; back row from left: Nancy Love, Dan Oerther, Charlie Werth, and Jim Mihelcic.

AEESP Lecturers Committee Selects Dr. Tony Fane as 2008 Lecturer

The Lecturers Committee is pleased to announce that Dr. Tony Fane has been selected as the 2008 AEESP Distinguished Lecturer. Dr. Fane is a chemical engineer with a Ph.D. from Imperial College, London. He has been working in the membrane field since 1973 when he joined the University of New South Wales (UNSW), in Sydney, Australia. His current interests are in membranes applied to environmental applications and the water cycle, with a focus on the sustainability aspects of membrane technology, including membrane bioreactors and water reuse. He is a former director of the UNESCO Centre for Membrane Science and Technology at UNSW and recently was named Temasek Professor at Nanyang Technological University (NTU), Singapore, with the program in Membrane Technology for Sustainable Water. Dr. Fane is currently director of the Singapore Membrane Technology Centre at NTU and is on the editorial boards of the *Journal of Membrane Science* (a former editor) and *Desalination*. He is a fellow of the Australian Academy of Technological Sciences and Engineering, a recipient of the Centenary Medal in 2002 for services to chemical engineering and the environment, and an honorary life member of the European Membrane Society. Dr. Fane plans to offer three talks:



Dr. Tony Fane

- Enhancing and Monitoring the Performance of Membrane Processes in the Water Industry
- The Energy Challenge for Membrane Technology in the Water Industry
- Membrane Technology in the Water Industry: Achievements & Challenges

Expenses associated with the lecture tour are shared by the host institution on a total lump sum, fixed cost basis. Each institution will contribute \$1,500 to AEESP to cover travel and lodging expenses. Institutions that would like to host Dr. Fane must return the request form (<http://www.aeesp.org/forms/FaneCFP.doc>) as a Word file by May 30, 2008 to Sarina Ergas (ergas@ecs.umass.edu).

AEESP Participates in Congressional Visits Day 2008

Submitted by: Allen P. Davis, AEESP Government Affairs Committee

On March 5, 2008, Inez Hua (Purdue University), Kimberly Jones (Howard University), Jennifer Becker and Allen Davis (both of the University of Maryland) visited the offices of 12 members of the U.S. Congress as part of the official Congressional Visits Day. Included in these visits were several key members of Congressional appropriations. Our primary goal was to request support for increases in budget for the National Science Foundation and EPA extramural research, including the STAR fellowship program. As a closing statement, the expertise of AEESP was offered as a resource to assist with complex environmental issues. Senate offices visited were those representing Indiana (Bayh and Lugar) and Maryland (Cardin and Mikulski). House offices included Representatives Bartlett (6th MD), Buyer (4th IN), Cummings (7th MD), Hill (9th IN), Norton (DC), Ruppensberger (2nd MD), Sarbanes (3rd MD), and Wynn (4th MD).

Congressional Visits Day is sponsored by the Science, Engineering, and Technology Group, of which AEESP is a member (www.aas.org/policy/cvd/index.html). With these visits, AEESP works to enhance support for our most important funding agency, the NSF. We also strive to develop a working relationship to offer our expertise to our legislators on environmental issues important to the nation.

The Government Affairs Committee (GAC) urges all AEESP members to become actively involved in the political process. Please contact your members of Congress and let them know of your desire for increased federal funding of science and technology research. The GAC can provide assistance; contact Allen Davis by email at: apdavis@umd.edu. An excellent resource on federal science and technology research funding is the *American Association for the Advancement of Science* R&D Budget and Policy Program (www.aaas.org/spp/rd/).

Congressional Visits Day is sponsored by the Science, Engineering, and Technology Group. With these visits, AEESP works to enhance support for our most important funding agency, the NSF. We also strive to develop a working relationship to offer our expertise to our legislators on environmental issues important to the nation.

AEESP-Sponsored Events at WEFTEC.08

This year, there will once again be reduced rates for AEESP members. The AEESP website will provide a special registration form during the summer.

Events on Monday, October 20, 2008

■ AEESP/WEF Scientists Luncheon

Dr. David Sedlak
Professor, Department of Civil and Environmental Engineering, University of California, Berkeley

“Thinking Beyond the Box about the Challenges Posed by Emerging Contaminants”

12:00–1:30 p.m.
McCormick Place, Chicago

■ AEESP/WEF Lecture

Glen T. Daigger, Ph.D., P.E., BCEE, NAE
Senior Vice President and Chief Technology Officer, CH2M HILL, Englewood, Colorado

“Evolving Urban Water and Residuals Management Paradigms: Water Reclamation and Reuse, Decentralization, Resource Recovery”

1:30–2:30 p.m.
McCormick Place, Chicago

■ Meet & Greet Reception, Awards Ceremony, and AEESP Annual Meeting (Sponsored by Carollo Engineers)

5:00–7:00 p.m.
Sheraton Chicago Hotel and Towers

The National Academy of Engineering has published a list of “grand challenges for engineering” for this century that could greatly improve sustainability and quality of life. The list is located at: <http://www.engineeringchallenges.org/cms/8996.aspx>.

14 Engineering Challenges for the 21st Century

- Provide access to clean water
- Restore and improve urban infrastructure
- Engineer the tools for scientific discovery
- Manage the nitrogen cycle
- Develop carbon sequestration methods
- Make solar energy affordable
- Provide energy from fusion
- Advance health informatics
- Engineer better medicines
- Reverse-engineer the brain
- Prevent nuclear terror
- Secure cyberspace
- Enhance virtual reality
- Advance personalized learning

President's Letter, continued

practitioners are also concerned about filling open vacancies in a world where issues such as population and other environmental stresses, changing regulatory requirements, and decaying infrastructure have created an even larger demand for our students.

In September 2006, the Joint Task Force of the American Academy of Environmental Engineers (AAEE) and the Association of Environmental Engineering and Science Professors (AEESP) recommended establishment of a *Society for Environmental Engineers*. The reason for a “society for” and not a “society of” is that the task force recognized that the organization should focus on “activities and outcomes of environmental engineering” rather than being a collection of individuals. In May of 2007 the AEESP Board of Directors endorsed creation of such an organization in accordance with the task force report.

If you are interested in leading the effort to create such an organization, please contact me. Otherwise, find that special place to practice, then a student, dean, or neighbor, and proclaim “*environmental engineering is a distinct discipline!*”

*James R. Mihelcic
President, AEESP*

AEESP Lecture at AWWA Annual Conference

Monday, June 9, 2008
12:00–12:45 p.m.
Georgia World Congress Center,
Atlanta, Georgia

Dr. Marc A. Edwards
Professor
Virginia Polytechnic Institute and
State University

**“Lead in Potable Water as a
Public Health Threat”**

IN MEMORIAM**Dr. Appiah (Amit) Amirtharajah**

Dr. Appiah (Amit) Amirtharajah, emeritus professor in the School of Civil and Environmental Engineering (CEE), Georgia Institute of Technology, passed away in his home in Roseville, California, on Saturday April 26, 2008. He was survived by his wife Uma, son Dr. Rajeevan Amirtharajah, his daughter Dr. Mohana Amirtharajah, and daughter-in-law Dr. Amy Chen.

“Amit has left a legacy in environmental engineering, especially for his work in drinking water treatment and supply,” said Georgia Tech/CEE professor Spyros G. Pavlostathis. “He influenced generations of environmental engineers in practice and academia, at home and abroad. His stature as a leader in the field was matched by his humanity and kindness. He will be greatly missed by students, faculty, and professionals.”

Dr. Amirtharajah’s distinguished career includes 40 years experience in environmental engineering: 12 years in practice and 28 years in academia. He held many notable positions throughout his career, some of which include chief engineer for the National Water Supply and Drainage Board, Colombo, Sri Lanka (1971–1976), coordinator of the environmental engineering program at Montana State University (1976–1986), professor in the School of Civil and Environmental Engineering at Georgia Tech (1986–2008), member of the AEESP Board of Directors (1995–1997), coordinator of the environmental engineering program at Georgia Tech (1997–2001), and principal technologist and senior consultant at CH2M Hill (2004–2008).

Dr. Amirtharajah received his Ph.D. from Iowa State University in civil engineering in 1971. His research interests were in environmental engineering with specialization in drinking water treatment and safe drinking water regulations as well as physicochemical processes of coagulation, flocculation, and filtration. He was the recipient of numerous honors and awards including the Rudolph Hering Medal from ASCE for the best paper in *Journal of Environmental Engineering*, the best paper award for the *Journal of the American Water Works Association*, the James M. Robbins Excellence in Teaching Award, the A.P. Black Research Award, the Sustained Research Award from Georgia Tech/CEE, and the AEESP Outstanding Publication Award. He was an emeritus member of AEESP and the author of numerous publications in the most prestigious journals in environmental engineering.

The Amirtharajah Graduate Fellowship in Environmental Engineering at Georgia Tech has been established by Dr. Amirtharajah’s family to support deserving Ph.D. students in environmental engineering. “Amit loved Tech and devoted his life to his students and making a contribution to providing safe drinking water. We want to honor him by making it possible for future generations of students to do research in the area of water and wastewater treatment in the years to come,” said his wife, Uma. Donations to the fellowship can be made by check payable to the Georgia Tech Foundation and sent to: Georgia Tech Foundation, Inc., 760 Spring Street NW, Suite 400, Atlanta, GA 30308.



“Amit has left a legacy in environmental engineering, especially for his work in drinking water treatment and supply. He influenced generations of environmental engineers in practice and academia, at home and abroad. His stature as a leader in the field was matched by his humanity and kindness.”

—GEORGIA TECH/CEE PROFESSOR
SPYROS G. PAVLOSTATHIS

University of Virginia

The University of Virginia's Civil Engineering Department has recently been renamed the Department of Civil and Environmental Engineering (CEE) and has hired three new faculty within its Environmental and Water Resources Engineering (EWRE) program. This shift reflects an evolving focus within the department on sustainable development and adaptive infrastructure. The new faculty nearly double the size of the EWRE program, which is now the largest departmental sub-discipline.

The three new faculty members are: Dr. Andres Clarens, Dr. Lisa Colosi, and Dr. Joanna Curran. **Dr. Clarens** completed his Ph.D. in 2008 at the University of Michigan in Ann Arbor in both civil and environmental



Dr. Andres Clarens

engineering and in the School of Natural Resources and Environment. He holds an M.S.E. in environmental engineering from the University of Michigan and prior to entering graduate school he served as a civil engineer in the United States Peace Corps. In 1999, Andres received a B.S. in chemical engineering from the University of Virginia. His graduate work explored the use of supercritical carbon dioxide as an environmentally preferable and technically superior alternative to the water-based coolants used widely in metals manufacturing. These novel solutions improve performance as measured by lower tool-wear rates and machining forces

and reduce the aerosol and waste treatment problems associated with conventional emulsions. His interest in reducing the impacts of industrial processes has led to more recent work investigating the science surrounding geologic sequestration of carbon dioxide. His research combines laboratory work centered on high-pressure carbon chemistry and computer modeling of engineering systems using finite element analysis, life cycle assessment, and other tools.

Dr. Colosi completed her Ph.D. in civil and environmental engineering in 2007 at the University of Michigan in Ann Arbor. This follows her M.S.E. in environmental engineering also at the University of Michigan and her B.S.E. in biological engineering at Cornell University where she graduated *magna cum laude*. Her doctoral research has focused on the degradation of organic pollutants that are otherwise resistant to conventional water/wastewater treatments including endocrine disrupting compounds, polychlorinated biphenyls, explosives residuals, and perfluorinated surfactants. In particular, she is interested in rational protein design as a means of optimizing the performance of enzymes already possessing some inherent ability to degrade pollutants of interest. She believes that this strategy may ultimately make it possible to tailor treatment for specific contaminants of interest.



Dr. Lisa Colosi

Dr. Curran has a Ph.D. in geography and environmental engineering from Johns Hopkins University and a master's degree from the School of Geosciences at the University of Texas at Austin. She has worked with the U.S. Fish and Wildlife Service as a hydrologist in Region 2. Prior to joining UVA, she was an assistant professor at Texas State University. Dr. Curran's research focuses on the processes of fluvial geomorphology operating at the watershed, channel reach, and sediment grain size spatial scales. It is founded in environmental engineering where there is application to today's river channel and watershed management issues. Past research includes the formation of a process based model explaining step-pool formation and spacing, creation of a surface-based transport model used in predicting channel adjustments to changes in flow and sediment input rates, and distinguishing between natural and anthropogenically induced changes in river morphodynamics in urbanizing watersheds. Current research continues to focus on channel evolution, mixed size sediment transport mechanics, implications and quantification of variable channel roughness, and factors causing forcing in channel form and function. Dr. Curran combines computer modeling, laboratory, and field research methods.



Dr. Joanna Curran

University of Nevada, Reno

We are pleased to announce the appointment of **Dr. Amy Childress** as the new chair of the Department of Civil and Environmental Engineering (CEE) at the University of Nevada, Reno (UNR), effective July 1, 2008.

Childress joined the CEE Department in July 1997 and has been promoted to full professor effective July 2008. She has been the director of the environmental engineering program for the past four years. Childress has led research funded by NSF, NASA, ONR, NREL, DOE, USBR, CA DWR, CA Energy Commission, and local organizations focused on membrane processes for water treatment and wastewater reclamation. She has been recognized for her early research in the surface characterization and interfacial aspects of pressure-driven membrane processes and for her recent research in membrane contactor processes. In 2004 she was a visiting professor at the University of New South Wales, Sydney, Australia and in June 2008 she will be a visiting professor with the studies abroad program in Puntarenas, Costa Rica.

Dr. Childress has been recognized for her early research in the surface characterization and interfacial aspects of pressure-driven membrane processes and for her recent research in membrane contactor processes.

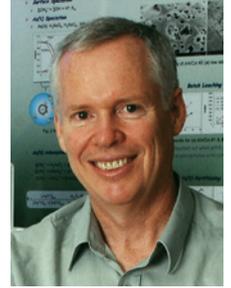


Dr. Amy Childress

The CEE Department at UNR continues its pursuit of excellence in the areas of research, teaching, and service. The undergraduate program, which is experiencing record-high enrollment with over 400 undergraduate students, offers two ABET accredited degrees: one in civil engineering and the other in environmental engineering. The graduate program was recently ranked among the top sixty graduate programs in the nation according to *U.S. News and World Report* 2008 rankings. The program includes specialty areas in environmental engineering, earthquake engineering, geotechnical engineering, pavement/materials, and transportation engineering. The environmental engineering program is home to AEESP's President-Elect (Childress) and AEESP's Newsletter Editor (Dr. Eric Marchand). The internationally acclaimed earthquake engineering program houses one of the fifteen NSF-funded sites of the Network for Earthquake Engineering Simulation (NEES) and features several prestigious projects such as the recently funded \$3.6M NSF Grand Challenge project on the seismic performance of nonstructural systems. The pavements/materials program houses the Western Regional Superpave Center and is a member of the Asphalt Research Program, a recently-funded national consortium. The newly established transportation engineering program focuses on projects related to traffic operations, traffic safety, and intelligent transportation systems. The department currently funds research exceeding \$15M with expenditures approaching \$5M annually.

University of Kansas

Dr. Craig Adams, P.E., will begin an appointment as chair of the Department of Civil, Environmental and Architectural Engineering and the J.L. Constant Distinguished Professor at the University of Kansas on July 1, 2008. Dr. Adams was previously the John and Susan Mathes Chair and director of the Environmental Research Center at Missouri S&T (formerly University of Missouri-Rolla). Dr. Adams earned his bachelor's degree in chemical engineering, and his master's and doctoral degrees from the University of Kansas. He has previously worked as a faculty member at Clemson University and as a research and development engineer in industry. Dr. Adams will continue his research work at KU in the area of analysis, occurrence, fate, and control of organic contaminants including estrogens and hormonal compounds, pharmaceuticals, personal care products, cyanobacterial/algal toxins, and disinfection byproducts. Dr. Adams will also continue his involvement with Engineers Without Borders at KU. Dr. Adams is a fellow of the American Society of Civil Engineers and serves on a variety of boards and committees for IWA, AWWA, AwwaRF, and EPA. Dr. Adams' awards include NSF Young Investigator, ASCE State-of-the-Art, ASCE Rudolf Hering, AEESP Distinguished Service, and AWWA Best Paper and Academic Achievement awards.



Dr. Craig Adams

University of Puerto Rico

Yang Deng, Ph.D., EIT, joined the faculty of the Department of Civil Engineering and Surveying at the University of Puerto Rico, Mayaguez campus, in January 2008. Dr. Deng earned his Ph.D. from the University of Miami in civil engineering (environmental discipline) in 2006. He received his M.Eng. (2001) and B.S. (1998) in civil engineering (water and wastewater engineering) from Tongji University in Shanghai, China. Dr. Deng was a postdoctoral associate at the University of Miami in 2006–2007 and an instructor at Georgia Southern University in 2007. He was also a water engineer in 2001–2002.

Dr. Deng's efforts are to apply advanced oxidation processes (AOPs) such as Fenton process to remove organic pollutants from water/wastewater as well as contaminated soil/groundwater



Dr. Yang Deng

Dr. Deng's primary research interests are physical and chemical processes, especially as related to water/wastewater treatment and environmental remediation. Particularly, his efforts are to apply advanced oxidation processes (AOPs) such as Fenton process to remove organic pollutants from water/wastewater as well as contaminated soil/groundwater. Another area of particular interest is the use of zero-valent iron (ZVI) to activate molecular oxygen at neutral pH conditions, room temperature, and atmospheric pressure for oxidation of aqueous organic contaminants. His work has revealed the specific mechanism in the emerging physicochemical process. Additional interests of Dr. Deng include landfill leachate treatment, membrane processes, wetland hydrology, and fate of toxic heavy metals in pressure-treated woods. For more information, please visit: <http://academic.uprm.edu/~ydeng/>.

Employment Projections for Environmental Engineering Very Favorable

(Source: <http://www.bls.gov/oco/ocos027.htm>)

“Environmental engineers should have employment growth of 25 percent during the projections decade, *much faster than the average* for all occupations. More environmental engineers will be needed to comply with environmental regulations and to develop methods of cleaning up existing hazards. A shift in emphasis toward preventing problems rather than controlling those that already exist, as well as increasing public health concerns resulting from population growth, also are expected to spur demand for environmental engineers. Because of this employment growth, job opportunities should be good even as more students earn degrees. Even though employment of environmental engineers should be less affected by economic conditions than most other types of engineers, a significant economic downturn could reduce the emphasis on environmental protection, reducing job opportunities.”

Arizona State University

We are pleased to announce the appointment of **Dr. Paul Westerhoff** as the new chair of the Department of Civil and Environmental Engineering (CEE) at Arizona State University (ASU), effective April 1, 2008. Westerhoff joined ASU and CEE in August 1995 and was promoted to full professor as a University Exemplar in 2007. He has led the environmental and water faculty groups in the department for the past 6 years. Westerhoff has a strong publication and research record, has garnered wide recognition for his work related to treatment and occurrence of emerging contaminants in water, and has been active in multidisciplinary research. He has led research funded by AwwaRF, USEPA, NSF, and local organizations investigating reactions and fate of oxo-anions (bromate, nitrate, arsenate) during water treatment, characterization, treatment and oxidation of natural organic matter in watersheds, formation of disinfection byproducts, removal of taste and odor micropollutants, and fate of nanomaterials in water. He has over 68 peer-reviewed journal article publications and has been involved in over 200 conference presentations. He belongs to ASCE, AWWA, AEESP, ACS, IOA, IWA, AWPCA, and IHSS and serves on numerous voluntary committees for these organizations. He currently is a member of the AwwaRF Expert Panel on Endocrine Disruptors, Pharmaceuticals and Personal Care Products, and serves as a member of the AwwaRF Public Council. Westerhoff has received several research awards including the 2005 ASCE Walter L. Huber Research Award and the 2006 WEF Paul L. Busch Award.



Dr. Paul Westerhoff

Lee Named as Environmental Editor of ET&C

Professor **Cindy M. Lee** has been

named an editor of Environmental Chemistry for *Environmental Toxicology and Chemistry (ET&C)*. *ET&C* is an international journal published by the Society of Environmental Toxicology and Chemistry (SETAC). The scope of *ET&C* is interdisciplinary and integrates the fields of environmental toxicology; environmental, analytical, and molecular chemistry; ecology; physiology; biochemistry; microbiology; genetics; genomics; environmental engineering; chemical,



Professor
Cindy M. Lee

environmental, and biological modeling; epidemiology; and earth sciences. Lee served two terms on the editorial board before her appointment as an editor.

Lee is a professor of environmental engineering and earth sciences and a faculty member of the Environmental Toxicology program at Clemson University and was the first director of the Environmental Sustainability program at the National Science Foundation from 2006 to 2007. She was appointed to a three-year term on EPA's Science Advisory Board Environmental Engineering Committee in October 2007. Her research interests are in the transformations of organic contaminants in natural and engineered systems with a special focus on chiral persistent organic pollutants (POPs) and pesticides.

Georgia Institute of Technology

Dr. **Konstantinos (Kostas) T. Konstantinidis** joined the faculty in the School of Civil and Environmental Engineering and in the School of Biology (adjunct) at the Georgia Institute of Technology as an assistant professor in November 2007. Dr. Konstantinidis holds a B.S. degree from the Department of Agronomy at Aristotle University of Thessaloniki, Greece (1999) and a Ph.D. degree from the Center for Microbial Ecology at Michigan State University (2004) under the supervision of Prof. James M. Tiedje. Prior to joining the faculty at Georgia Tech, he completed postdoctoral research in the laboratory of Professor Edward F. DeLong at the Massachusetts Institute of Technology, where he employed cutting-edge genomic technologies to study life's molecular adaptations to the deep-sea and the complexity of oceanic microbial communities.



Dr. Konstantinos (Kostas) T. Konstantinidis

His research interests are at the interface of microbiology, environmental engineering, and computational biology with the overarching goal to broaden understanding of the genetic and metabolic potential of the microbial world and explore the biodiversity of microorganisms for biotechnological purposes. Addressing these research objectives will be important for preserving the natural biodiversity on the planet and for a better understanding of the microbes that drive the life-sustaining biogeochemical cycles on Earth and cause or control diseases in humans and animals.

Drexel University

Francisco **Montalto**, Ph.D., joined the faculty of the Department of Civil, Architectural, and Environmental Engineering at Drexel University in fall 2007. Dr. Montalto comes to Drexel after a two-year fellowship at the Earth Institute at Columbia University, before which he was an adjunct professor at The Cooper Union for the Advancement of Science and Art in New York City, where he also received his bachelor's degree. His master's and Ph.D. are from Cornell University's Department of Biological and Environmental



Dr. Franco Montalto

Engineering. Dr. Montalto has research interests in sustainable water resource engineering. His focus is on the relationship between built infrastructure, human/societal water needs, and ecohydrologic patterns and processes, with current research in the fields of ecological restoration, urban storm-water management and green design, and the planning of water interventions in rural, dry-land settings of the developing world. The Civil, Architectural, and Environmental Engineering department at Drexel University is committed to excellence in research and education and Dr. Montalto is a welcome addition.

University of Colorado at Boulder

The University of Colorado at Boulder is pleased to announce that **Karl G. Linden**, Ph.D., has joined the faculty as professor of environmental engineering and Liebman Faculty Fellow in the Department of Civil, Environmental, and Architectural Engineering after 8 years on the faculty at Duke University. Dr. Linden, originally from New York City, received his B.S. from Cornell University and M.S. and Ph.D. from the University of California at Davis. His research focuses on the efficacy of UV irradiation for inactivation of microbial pathogens, the use of UV and oxidation technologies for the degradation of environmental pollutants in water, and innovative technologies for water reuse. In 2004 he received the Klein/Stansell Family Distinguished Research Award and was a Switzer Environmental Foundation Leadership Fellow from 2001–2003.

Dr. Linden's research focuses on the efficacy of UV irradiation for inactivation of microbial pathogens, the use of UV and oxidation technologies for the degradation of environmental pollutants in water, and innovative technologies for water reuse



Dr. Karl G. Linden

His current research is funded by the American Water Works Research Foundation, the Water Reuse Foundation, the U.S. EPA, the U.S. Department of Agriculture, the National Institute of Environmental Health Sciences, and various utility and industrial sponsors. He is the author of over 70 peer-reviewed publications, serves as an associate editor of *ASCE Journal of Environmental Engineering*, and is a founding board member and an International Vice President of the International Ultraviolet Association.

Linden joins a faculty of 13 at Boulder in the water engineering area. He will help initiate new efforts in water reuse research and interface with the Boulder-based USGS group in trace analysis of environmental contaminants.

University of Cincinnati

Daniel B. Oerther, Ph.D., P.E., BCEE has been appointed Head of the Department of Civil and Environmental Engineering at the University of Cincinnati effective March 31, 2008. He obtained his B.A. in biological sciences and his B.S. in environmental engineering from Northwestern University, and M.S. and Ph.D. in environmental engineering from the University of Illinois, Urbana-Champaign. Oerther has been at UC since 2000, most recently as the inaugural director of the university-wide Center for Sustainable Urban Engineering. Recognized for his research in environmental biotechnology including molecular microbial ecology of sewage treatment, remediation of PAHs and metals, and developing MEMS and metagenomic approaches to track agents of infectious disease, in recent years Oerther has expanded his research interests to include appropriate technology for water quantity and quality in developing communities as well as sustaining urban environments. In 2006, he was a Fulbright Visiting Scholar at the Kasturba Medical College, Manipal, India, and in 2007 he was honored with the UCI21 President's Excellence Award for developing a balanced portfolio of scholarship and service. Oerther is a member of the AEESP Board of Directors and is the faculty mentor for the UC student chapter of Engineers Without Borders.



Dr. Daniel B. Oerther

News submissions deadline

The submissions deadline for the September 2008 AEESP Newsletter is August 1, 2008. Send news items to:

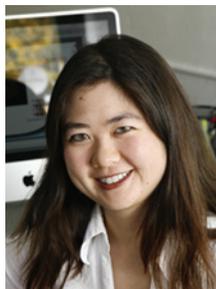
*Eric Marchand
AEESP Newsletter Editor
marchand@unr.edu*

Washington University in St. Louis

Dr. Young-Shin Jun and **Dr. Cynthia Lo** have joined the Department of Energy, Environmental, and Chemical Engineering (EECE) [www.eec.wustl.edu] as assistant professors. The appointments of Dr. Jun and Dr. Lo are part of the continuing growth of the new EECE department. They are contributing to the department's engineered aquatic processes cluster area and have complementary expertise in molecular-scale environmental science and technology. Dr. Jun has a Ph.D. in environmental sciences and engineering from Harvard University and has recently completed a postdoctoral research position at Lawrence Berkeley National Laboratory. Her research is focused on environmental nanochemistry, environmental chemical kinetics, and contaminant fate and transport. She has expertise in molecular-scale techniques for investigating reactions at the solid-water interface. In the spring 2008 semester, she developed a new course titled Environmental Nanochemistry. Dr. Lo received her Ph.D. from the Massachusetts Institute of Technology in chemical engineering. She was a research scientist with the National Institute of Standards and Technology prior to joining Washington University. Dr. Lo applies state-of-the-art computational chemistry and molecular modeling approaches to the investigation of environment systems. Her research interests include the structure and reactivity of biomaterials and aquatic environmental interfaces.



Dr. Young-Shin Jun



Dr. Cynthia Lo

University of Michigan

Walter J. Weber Jr., the University of Michigan Gordon M. Fair and Earnest Boyce Distinguished University Professor, continues an unprecedented 45-year record of significant contributions to the field of environmental sciences and engineering, and recognitions corresponding thereto. He is one of approximately only 25 of the several thousand active Michigan faculty members to hold a Distinguished University Professorship, the University's highest academic recognition. The beat goes on however, for among contributions made and recognitions received within just the past two years, Walt has accomplished and fully enjoyed the landmarks identified below.

- Mentored three new Ph.D. graduates, bringing his total from several different departments and colleges at Michigan to a number (75) greater than his current age (73).
- Received the 2007 Lawrence K. Cecil Award from the American Institute of Chemical Engineers (AIChE) for lifetime achievements in the solution of environmental issues. He was particularly



Professor Walter J. Weber Jr.

Professor Weber is one of approximately only 25 of the several thousand active Michigan faculty members to hold a Distinguished University Professorship, the University's highest academic recognition

cited for advancing the sustainability of critical global water resources and potable water supplies.

- Received American Chemical Society and Thomson Scientific (ISI) recognition as "most highly cited" (i.e., upper 1% of ACS journal papers) author over the past 10 years for one of his ES&T series on the distributed reactivity model for sorption by soils and sediments.
- Received Rutgers University School of Engineering 2008 Distinguished Alumnus (M.S.E., 1959) Medal for Outstanding Achievement in Engineering and Science Education. This follows his receipt in 1997 of the inaugural Brown University Division of Engineering Distinguished Alumnus (Sc.B., 1956) Medal.

Fairness

by P. Aarne Vesilind, Bucknell University

The recognition that engineers owe a responsibility to society led to the adoption of the engineering codes of ethics which state unequivocally that “*The engineer shall hold paramount the health, safety, and welfare of the public.*” The use of the word “public” in this statement implies that the engineer must, in the performance of his or her duties, treat all people with respect. That is, the engineer has to be a *fair* engineer if he or she is to properly conduct himself or herself as a professional.

In scholarly writings on ethics, the concept of fairness is quite muddled. Fairness is a moral concept, but it is quite different from other moral rules such as telling the truth, causing pain, and so on. Fairness is thought to be a higher level value, a more sophisticated concept that underlies many of the normative ethical theories. It is also more complicated than the common moral rules (such as keeping promises) and is difficult to characterize objectively.

Perhaps a useful definition of fairness in engineering might be that fair engineers are those who, in the use of their technical skills, treat all people according to democratically accepted and morally defensible rules. The more direct contact an engineer has with the public, the more likely it is that he or she will be confronted by an opportunity for fair or unfair behavior.

An effective way to describe fairness is to use an actual story. As described by S. Azar (“The Proposed Eubanks Road Landfill: The Ramifications of a Broken Promise,” undergraduate independent study, Duke University, Durham, NC, 1998), this story begins in Chapel Hill which, during the 1960s progressive era, organized the first truly integrated school system in North Carolina and was the first town in North Carolina to elect an African-American as mayor, Howard Lee.

At that time the town was using a small landfill owned by the university, but this landfill was rapidly running out of space, and so in 1972 the town chose an apparently ideal piece of land to the north of the town that was in a convenient location to both Chapel Hill and Carrboro, a small community next to Chapel Hill.

There was, however, a vibrant African-American community, the Rogers Road neighborhood, that abutted the intended landfill area. The people who lived along Rogers Road expressed their dissatisfaction with the choice of a landfill site and went to Mayor Lee for help. The mayor talked them into accepting the decision, and promised them that this would be the one and only landfill that would be located

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P. Aarne Vesilind

near their neighborhood, and if they could endure this affront for ten years, the finished landfill would be made into a neighborhood park. Most importantly, they were told that the next landfill for Chapel Hill would be somewhere else and that their area would not become a permanent dumping site. The citizens of the Rogers Road neighborhood grudgingly accepted this deal and promise and then watched as the Orange County Regional Landfill went into operation. The three communities contributing to the landfill, Chapel Hill, Carrboro, and Hillsborough, along with Orange County, formed a quasi-governmental body called the Landfill Owners Group (LOG) to operate the landfill.

As the population of Orange County exploded in the 1970s it became quite clear that yet another new landfill would be needed. LOG purchased a tract of land next to the existing landfill, called the Green Tract, with the apparent intent of using it when the original 1972 landfill became full but without ever stating so publicly.

But by the early 1980s it became evident that the Green Tract was too small and the LOG set up a landfill selection committee (LSC) to find a new site. They hired XYZ Engineering, a consulting firm that had assisted other communities in the selection of landfills. (XYZ is a pseudonym for the actual firm which did not respond to requests for comments to this story.) XYZ selected 16 locations as potential landfill sites, and included the Green Tract on their list, even though it was too small and did not fit their own criteria. This site became known as OC-3. The engineers, who were fully aware of the promises made to the Rogers Road neighborhood, did not include these promises as considerations in the selection process. Following public hearings, the 16 sites were reduced to 5, one of which was still the Green Tract. The promise to the Rogers Road neighborhood did not enter into the selection process.

When the members of the LSC were asked later about the promise, they argued that since Howard Lee did not represent Carrboro, Hillsborough, or Orange County, the well-intentioned promise was not binding by the other governmental entities. In addition, although Lee acknowledged making this promise, this was never found on any written document. Further, the people who lived in the Rogers Road neighborhood were told that the promises made by former elected officials were null and void because the new officials could not be held to such promises.

The Rogers Road neighborhood was encouraged by the fact that the Green Tract was too small to serve as the next landfill, a point acknowledged by the engineers. But their optimism was short-lived when, late in the process and well after the public hearings, a new possible area for the landfill was introduced. Named OC-17, this site abutted the existing landfill, the Green Tract, and the Rogers Road neighborhood, and included a large tract of land in Duke Forest, a research and recreational forest owned by Duke University. The new landfill would now include both OC-3 and OC-17.

This area quickly became the site of choice, and following LSC and LOG approval, the decision went to the four governmental bodies. Chapel Hill, Hillsborough, and Orange County approved the site with little debate, but the representatives for Carrboro brought up the promise made to the Rogers Road neighborhood and their council failed to approve the plan. This delay allowed Duke University to marshal its forces and to hire appropriate lawyers and scientists to come to the defense of Duke Forest. In 1997, Duke University announced that it had deeded a section of Duke Forest to the federal government for conducting experiments. The federal government now controlled this land and the fight was over. It took clever legal work, the effective battle fought by the citizens of the Rogers Road neighborhood, and the courage of Carrboro's council to stop the landfill.

For us, the central characters in this story are the engineers who worked for XYZ Engineering, the consulting firm hired to find the site for the new landfill. They knew very well that a promise had been made to the people who lived on Rogers Road, and they had an opportunity to do the right thing by not including the Green Tract on the original list of potential sites. They could have, simply by using the promise as a selection criterion, eliminated the site. Instead, they listed the site and proceeded as if they were ignorant of the controversy. They could have recognized the environmental injustice imposed on the Rogers Road neighborhood and become their champions, but chose not to do so. They were not *fair* engineers.

Newsletter policies

AEESP welcomes AEESP members to submit items such as letters to the editor, letters to the president, news, ads, and announcements to the Newsletter. The decision to publish is subject to the discretion of the Editor and the AEESP Board of Directors. All submissions for the AEESP Newsletter should be sent electronically as an attached file to the Newsletter editor, Eric Marchand.

Submissions deadline: The AEESP Newsletter is published three times a year in January, May, and September. The deadline for Newsletter submissions is one month prior to the publication date (e.g., the deadline for the January Newsletter is December 1). Please keep in mind when submitting items with deadline dates that members receive issues four to six weeks after the submissions deadline.

Regular member advertising policy: Any advertisement, including faculty, post-doc, or student ads, or other types of announcements submitted by an AEESP member, will be free for the first 250 words (approximately 1/4 page) and then charged at \$1 per word for additional content, if formatted to fit in a column. Non-members will be charged at the per word rate for any size column-formatted ad. Full page formatted advertisements will be charged at \$500 for members and \$1,000 for non-members. All formatted full page ads will be accompanied by a free web ad. Programs will be limited to one full page of ads and/or announcements per issue.

Photo submissions: Photo submissions to the AEESP Newsletter are encouraged. Please submit your photos electronically in JPG format at the highest dimension for downsizing to print resolution (preferably less than 750 KB). Also, please include captions with names, locations, and dates.

Sustainable and Safe Drinking Water in Developing and Developed Countries: Where Science Meets Policy

Institute for the Environment / Drinking Water Research Center

The University of North Carolina at Chapel Hill
Chapel Hill, NC USA

November 5 and 6, 2008

www.ie.unc.edu/content/news_events/symposia/2008/

You are invited: *Sustainable and Safe Drinking Water in Developing and Developed Countries: Where Science Meets Policy*, the 2008 Environmental Symposium of The University of North Carolina at Chapel Hill. The symposium is directed at water resources faculty and graduate students from research universities, and water resources research and policy staff from agencies such as US EPA, CDC, USGS, AWWA, WEF, EU, WHO, USAID, UN, and others.

Sustainable and Safe Drinking Water will begin with a plenary session of presentations by several internationally known figures in the area

of water quality and policy. It will then split into two tracks for which abstracts are being solicited:

- Institutional programs and appropriate technologies for developing countries, and
- Measurement, regulation, and control of emerging microbial and chemical contaminants.

Abstracts of papers for platform and poster presentations consistent with the conference themes are invited. Abstracts are due by May 15, 2008 and should consist of a 300–500 word description of the presentation summarizing the objectives, significance, and key findings of the work. Abstracts and registration forms may be submitted electronically through the symposium's website.

Following the symposium on November 7 will be a memorial symposium honoring the late Dr. Daniel A. Okun.



Publishing

News from
IWA Publishing

Water Science and Technology

I am pleased to report that ISI have confirmed that they have completed their evaluation of Water Science and Technology and are relisting it in Web of Science, effective from the start of 2008.

This reverses the decision taken last year by ISI that led to the absence of a 2006 Journal Citation Index for WST. This is a direct result of the new editorial policy adopted for WST of inviting direct submission of papers on all aspects of the science and technology of water and wastewater. All papers are rigorously peer reviewed under the control of the Editorial Board.

The journals have also been redesigned, with a new size and new designs for the covers and the page format.

Gustaf Olsson
Editor-in-Chief

New Titles from IWA Publishing

Water Reuse: An International Survey

Contrasts, issues and needs around the world
Blanca Jimenez (UNAM, Mexico) and Takashi Asano (University of California at Davis)

ISBN13: 9781843390893 · ISBN: 1843390892

May 2008 · 452 pages · Paperback · Full Price: US\$ 250.00

Effective Cross-Border Monitoring Systems for Waterborne Microbial Pathogens: A Plan for Action

Joan Rose and Erin Dreelin (Michigan State University)

ISBN13: 9781843391692 · ISBN: 1843391694

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Cryptosporidium and Cryptosporidiosis: Second Edition

R. Fayer (US Dept. Agriculture) and Lihua Xiao (National Center for Disease Control and Prevention, Atlanta GA)

ISBN13: 9781843391920 · ISBN: 1843391929

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Membrane Bioreactors

Operation and Results of an MBR Wastewater Treatment Plant

A.G.N. van Bentem et al. (STOWA, The Netherlands)

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Cities of the Future

Towards integrated sustainable water and landscape management

Vladimir Novotny (Northeastern University) and Paul Brown (CDM)

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Membership in AEESP is on a calendar-year basis. When you join the Association, you will be sent the current AEESP Membership Directory and previous Newsletters and other materials which have been sent to members during the year, if your application is received prior to October 1. If you join after October 1, your membership will begin the following calendar year, but the current AEESP Membership Directory will be sent to you immediately upon approval of your membership by the Association's Secretary.

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Please return this form along with your dues and c.v. to the Secretary of AEESP:

Charles J. Werth
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Eric Marchand, Editor
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