AEESP Newsletter
Association of Environmental Engineering and Science Professors

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In this issue...

Welcome new Editor

Professor Eric Marchand of the University of Nevada, Reno is the new editor of the AEESP Newsletter. Eric may be contacted at marchand@unr.edu or (775) 784-6817.

2007 Education and Research Conference

The Conference Planning Committee has completed their hard work and the next AEESP Education and Research Conference is now scheduled to be held July 27 to August 1, 2007 at Virginia Polytechnic Institute and State University (Blacksburg, VA).

Check out AEESP online at:

AEESP.org

Board Member's Message
What's in AEESP for you?

[Editor's Note: Lynn Katz, past Treasurer and Board Member of AEESP, is providing this newsletter commentary.]

So much to write, so little space. Oh wait, this isn't ES&T! When Pedro Alvarez invited me to write the Board Member's Message for this AEESP Newsletter issue, I spent a great deal of time thinking about what message I would like to deliver. My decision to consider a position as an AEESP board member originated from my interest in supporting the education portion of our mission. So, I thought that I could talk about the imprint that we leave on our students through our curriculum choices, and I could relate the story of my early decision to become an environmental engineer because Mr. Davies, a junior high school science teacher, forced us to read *Silent Spring* and build a model landfill. I could then relate to you the efforts of the AEESP Education Committee to provide lab manuals, review textbooks, and provide curricular materials. I could summarize for you the results of a recent AEESP workshop on Education Needs to Address Sustainability in which the participants asked AEESP to take a larger role in developing educational resources for teaching sustainability and to become a clearinghouse for sustainability modules for engineering and non-engineering courses.

Then, I considered discussing how I have observed substantial changes in opportunities for women in our field during my career. I could relate stories about working in a consulting firm as the only female engineer, going through my B.S. and M.S. degrees in environmental engineering never even realizing that there were no female professors, becoming the first female faculty member with an engineering degree in a college of engineering, and then finally recognizing the subtle impacts that female professors have on students and their career choices. I could express my concern that while I teach in a program in which over 35 percent of the students and 20 percent of the faculty are female, women have not yet crossed the threshold into leadership positions.


Lynn E. Katz

"...the really remarkable thing that I have noticed as a member of this profession is the passion of our membership."

I could relate to you how I believe that our field has evolved from one based on the application of empirical relationships to one based on fundamental science, and that as a result, our field has attracted both scientists and engineers who have a passion for environmental engineering. That even though we have struggled as an organization to understand what the S means in AEESP, we rarely struggle to understand its importance.

But then I thought that I should tell you that the really remarkable thing that I have noticed as a member of this profession is the passion of our membership. Over my tenure in our field, our research agenda has shifted from increasing dissolved oxygen in natural waters to removing carcinogens from air, water and soil to providing a sustainable world. Not only have I watched our young professors and graduating students take on the responsibility for addressing each contemporary challenge

Newsletter submissions

Submissions may be sent electronically to:
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http://www.aeesp.org/pubs/NewsArch.html

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we have faced, but I have listened to our most distinguished professors present innovative strategies with the same passion as the students who knock on our doors asking which of us will advise their new EWB or ESW chapter.

Finally, I realized that the one thing that I really wanted to tell the membership of AEESP is that, unlike Groucho Marx who indicated that he would never care to belong to a club that accepts people like him as members, I am proud to be a part of this organization. As a young faculty member I often wondered what AEESP had to offer me. I already had a job so the faculty ad page was no longer important, and participation in ACS was more relevant to my research career. However, as I became more involved, especially as a board member, I have realized that the key benefit that AEESP provides its membership is the membership. Not only have the research and teaching collaborations that I have made with people I have met through AEESP had a positive impact on my career, but the friendships I have made have benefited my life. I would like to extend my appreciation to Joanne Fetzner for the friendship and guidance that she has provided to me and other AEESP treasurers and board members over the years. I would like to thank Catherine Peters, Marc Edwards and Pedro Alvarez for their outstanding leadership during my tenure on the board, Chuck Haas and Jerry Speitel for enduring my first endeavor into balancing a checkbook, and Amy Zander, Meny Elimelech, Bill Ball, Joan Rose, Paige Novak, Kim Jones, Phil Singer, Amy Childress, Jim Mihelcic, David Freedman, and Charlie Werth for making my experience as an AEESP board member rewarding.

Lynn E. Katz, Ph.D.
Associate Professor, Civil Engineering
University of Texas

Board Highlights

Submitted by James R. Mihelcic

In 2005, membership increased approximately 10% to 815 members and 14 sustaining members. This is the largest increase in more than 10 years and the first time membership has exceeded 800 in the history of the Association! The Board would like to thank all the members for their continuing support.

Our organization is currently in a sound financial situation for future years. Much of this is because of the hard work of our past treasurer, Lynn Katz.

The Conference Planning Committee has completed their hard work and the next AEESP Education and Research Conference is now scheduled to be held July 27 to August 1, 2007 at Virginia Polytechnic Institute and State University (Blacksburg, VA).

Members will soon hear more detailed information about AEESP sponsored events at this fall's WEFTEC (October 21-25, Dallas, TX). Dan Oerther has again been working with WEF to obtain a reduced registration fee for AEESP members (see page 3). We are currently planning our annual "meet and greet" that will include our annual awards ceremony. Philip Bedient is scheduled to speak at the WEF/AEESP Scientists Luncheon on "Flood Forecasting including Effects of Hurricanes" and James Barnard is scheduled to speak at the Research 1 Session/AEESP Lecture on "Overview of Biological Nutrient Removal in Wastewater Treatment."

At the AWWA Conference & Exposition (June 20-23, 2006, New Orleans), the Lecturers Committee (Mort Barlaz, Chair) has arranged for Pat Brezonik and Gary Amy to speak.

The Demographics and Diversity Committee (Sharon Jones, Chair) published an article titled "An Initial Effort to Count Environmental Engineers in the USA" in *Environmental Engineering Science* (November, 2005). The article is a first attempt to count the number of environmental engineering faculty, students, and practitioners.

2006 AEESP Distinguished Lecturer

Professor Joan Rose has been named the 2006 AEESP Distinguished Lecturer. Dr. Rose serves as the Homer Nowlin Endowed Chair of Water Research at Michigan State University and is currently Director of the Center for Water Sciences. Dr. Rose is an international expert in water microbiology, water quality, and public health safety, and has been involved in the investigation of numerous waterborne outbreaks world-wide. Her work has examined new molecular methods for detecting waterborne pathogens and zoonotic agents such as *Cryptosporidium* and enteric viruses and source tracking techniques. Dr. Rose's research has addressed the microbiological elements of water supplies, water used for food production, and coastal environments, as well as water treatment, wastewater treatment, reclaimed water and water reuse, and quantitative microbial risk assessment. She is specifically interested in microbial pathogen transport in coastal systems and has studied the impact of wastewater discharges and climate on water quality. Dr. Rose has also been honored as the recipient of the 2001 Clarke Prize from the National Water Research Institute.

Dr. Rose received her Ph.D. in Microbiology from the University of Arizona in 1985. She served as a Professor in the College of Marine Science at the University of South Florida prior to joining MSU. She has served on numerous advisory committees and boards including the Science Advisory Board of the International Commission of the Great Lakes, the Research Advisory Board of the National Water Research Institute, the AEESP Board, and Chaired the Drinking Water Committee for the Science Advisory Board for the U.S. Environmental Protection Agency.

Abstracts of Dr. Rose's proposed seminars for this series will be released shortly along with a solicitation for proposals to host Dr. Rose during late Fall 2006 and early Spring 2007. Additional information on hosting the 2006 AEESP Distinguished Lecturer can be obtained by contacting Mark Wiesner (wiesner@rice.edu) or Mort Barlaz (barlaz@eos.ncsu.edu).

AEESP member discounts for WEFTEC '06

The Water Environment Federation has approved reduced prices for members of AEESP to attend WEFTEC.06 in Dallas, TX from October 22-25. Expected costs will include: $50 for the AEESP/WEF Scientist Luncheon, $50 for WEFTEC Research Session 1 on Biological Nutrient Removal with the AEESP/WEF Keynote Address, and $300 for attending WEFTEC Research Sessions throughout the week. A special registration form will be prepared and posted on the AEESP Web site during Summer 2006.

If you have any questions, contact Daniel Oerther at Daniel.Oerther@uc.edu.

AEESP -AWWA Lecture

The AEESP Lecture at this year's AWWA Annual Conference and Exposition in San Antonio will be presented by Dr. Gary Amy, Professor of Water Supply and Sanitation, UNESCO-IHE Institute for Water Education, Delft, The Netherlands. The title of his lecture will be "Fundamental Insights into Micropollutant Rejection by High Pressure Membranes." The lecture is scheduled to be presented at noon on Monday, June 12, 2006, at the convention center, and is being sponsored by Black & Veatch, a Sustaining Member of AEESP.

AEESP-A&WMA Lecture

The AEESP-A&WMA Lecturer is Patrick L. Brezonik, Professor of Civil Engineering at the University of Minnesota. Dr. Brezonik currently serves as Program Director for Environmental Engineering/ Environmental Technology Programs at the National Science Foundation. He will speak on research funding opportunities at the AEESP-A&WMA Breakfast at 7:00 AM on June 21, 2006 at the Annual Meeting of the Air & Waste Management Association in New Orleans, LA.

For additional information, technical program, and registration information, see http://www.awma.org/ACE2006/.

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, April, 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.

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.

Photo submissions

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

Expediency and the evolution of the coliform standard for drinking water

by P. Aarne Vesilind, Bucknell University

Today we take for granted that coliform organisms are acceptable indicators for estimating the potential bacterial contamination of drinking water, but the evolution of this standard has an interesting history, both in the understanding of microbiology, and the application of this science to public benefit. A prominent figure in the development of public policy with regard to the setting of governmental health standards was Earle Phelps, whose ideas provided the philosophical backbone for all such standards.

Phelps is perhaps best known for his contributions to the analysis of oxygen depletion in streams and rivers due to the discharge of organic wastes. The Streeter-Phelps dissolved oxygen sag curve is still a staple in environmental engineering courses, and continues to be used in the setting of effluent standards for point sources. Phelps also wrote two classic texts, *Public Health Engineering* and *Stream Sanitation*. In the former, Phelps introduced a new concept called "the principle of expediency," defining this as the attempt "to reduce the numerical measure of probable harm, or the logical measure of existing hazard, to the lowest level that is practical and feasible within the limitations of financial resources and engineering skill." In addition to his principle of expediency, Phelps also proposed the "principle of relative purity," which recognizes that no natural waters are chemically pure and some undesirable impurities must be accepted as a matter of expediency. He wrote,

> Administrative standards must be sufficiently precise for legal enforcement. Like the speed laws for the control of traffic, they must set up an arbitrary line between good and bad, the permissible and the forbidden, where no such line has any real meaning or specific justification. This situation is unfortunate but unavoidable.

Phelps's principles of expediency and relative purity provide insight into how standards should be developed and changed. He believed that the goal should always be to reduce contamination as much as possible, but this goal must also be aligned with technological developments and economic limitations.

The evolution of the coliform standard demonstrates the two ideas central to Phelps's principle of expediency. The coliform standard is aimed at reducing health risks, but this has to be balanced by the availability of technology and the cost of implementing the standard.

When the first U.S. Public Health Service drinking water standards were published in 1914, the coliform standard was effectively 2 coliforms per 100 ml. This was quite strict for the time, and there was substantial opposition from many water suppliers. For example, H.E. Jordan, Superintendent of Filtration of the Indiana Water Company, criticized the standards for being too strict. In his paper entitled "The Standards for Drinking Water on Interstate Carriers," which he presented at the February 1915 meeting of the Indiana Water Supply Association, he cited cities that were believed to have safe water but that did not meet the standard, including Lawrence, Massachusetts with an average coliform concentration of 11 per 100 ml. Jordan defended these cities with the declaration, "it is the consensus of opinion that the public water supply as a factor in typhoid causation has been eliminated." Unfortunately, epidemiological evidence indicated that waterborne typhoid was still a problem, decades after Jordan's statement. Nevertheless, the then strict standard resulted in a marked decrease in the incidence of typhoid and other waterborne diseases.

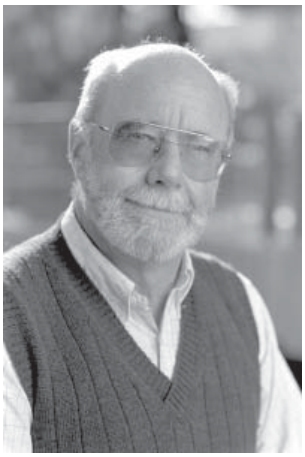
By 1925, research on rapid sand filtration had demonstrated that it was technologically and economically possible to produce cleaner water, and the coliform standard was lowered to 1 coliform organism per 100 ml. This number continued to be used until 1989 when it was again decreased as our skill in treating water had developed and as we were increasingly willing to invest resources in providing safer drinking water. By 1989, the standard was effectively set to 0.05 coliform per 100 mL, and the limit can be expected to become even stricter with better methods of disinfection.

The progressive lowering of the coliform standard continues to demonstrate Phelps's "principle of expediency." Because the reduction in the coliform standard took into account treatment technologies, operating experience, and costs, it never placed an unreasonable burden on industries or water treatment facilities, and thus was a fair and equitable standard that could be met by the vast majority of water suppliers.

The large growth in the number of contaminants regulated by the government in recent years challenges the principle of expediency. The 1986 Safe Drinking Water Act Amendments require the U.S. EPA to regulate 25 additional contaminants every three years. Although there is general agreement that the government should maintain an active role in protecting human health, such arbitrary requirements could be dangerous. The 1914 U.S. Public Health Service Drinking Water Standards were established as a response to an obvious public health problem while giving considerations to the costs of the standards and the simplicity of the testing procedures. It might seem expedient for the U.S. EPA to only develop new standards when there is evidence that a specific contaminant poses a health risk, and not because Congress mandated a quota of contaminants to be included in the standards. If Earle Phelps were alive today he would no doubt argue that there is no such thing as assuredly safe water, and that government should use sound judgment when establishing regulations to protect human health.

[Acknowledgement: This short note is based on a paper written initially by Lauren McWilliams, which is being prepared for publication by her and P.A. Vesilind.]

In memoriam...
Paul V. Roberts



Paul V. Roberts, C. L. Peck, Class of 1906, Professor Emeritus, Department of Civil and Environmental Engineering at Stanford University, died of leukemia at his home in Cupertino on February 12, 2006. He was 67. Professor Richard Luthy, Chairman of Stanford's Department of Civil and Environmental Engineering, commented, "Paul was one of the very best and most admired environmental engineers of my generation."

Paul was born on November 27, 1938. He received a B.S. degree in chemical engineering from Princeton University, and a Ph.D. degree in chemical engineering from Cornell University in 1966. Paul spent nearly a year as a Visiting Professor at the Catholic University of Valapraiso and Technical University Santa Maria, Chile. He later moved to California to work as a Process Engineer with Chevron Research Company. In 1968 he joined the Stanford Research Institute in Menlo Park, where he worked for four years. His interest in nature and his increasing concern about industrial pollution led him to pursue an M.S. degree in environmental engineering, which he received from Stanford in 1971. He then joined the Swiss Federal Institute of Water Supply and Water Pollution Control, and in 1973 was promoted to Head of their Engineering Department. In 1976 Paul returned to California to begin his career as a Stanford University faculty member.

Paul received a regular appointment at Stanford as Associate Professor in 1981, as Professor in 1986, and then as the C.L. Peck, Class of 1906 Professor in the School of Engineering in 1989. He served as Associate Chairman for the Department of Civil and Environmental Engineering from 1985 to 1990. He became an Emeritus Professor in 2000.

Paul was a pioneer in applying fundamental principles of mass transport and chemistry to drinking water treatment and wastewater reclamation research. He directed a team of researchers to evaluate the potential for reclaiming wastewater by advanced treatment processes followed by injection and storage in the underground aquifer. Paul pursued a fundamental understanding of key physicochemical processes affecting disinfection and contaminant removal during water and wastewater treatment (e.g., adsorption and volatilization processes) as well as processes of contaminant transport in the subsurface environment. In the latter regard, he completed numerous conceptual and laboratory investigations and also conceived and directed the first and most definitive field study yet conducted on the movement and fate of hazardous chemicals in groundwater at the Borden site in Canada. Paul and his team clearly demonstrated the scientific value of carefully designed large field experiments to test hypotheses, to validate mathematical models, to generate understanding of important natural processes, and to surface important questions in need of better theoretical understanding. He brought together an interdisciplinary team of hydrogeologists, chemists, microbiologists, and engineers, and showed the value of interactions between laboratory studies, field studies, and theory for the solution of highly complex environmental problems.

Stanford Professor Emeritus Perry L. McCarty indicated, "The esprit de corps that developed in Stanford's Environmental Engineering and Science Program with Paul's warmth and generosity helped in creating an exceptional teaching and research atmosphere for us all."

He and his graduates have four times won the Academic Achievement Award of the American Water Works Association for outstanding doctoral research. He has over 200 publications. He was a Member of the Swiss Academy of Sciences. In 1997, he was elected to the National Academy of Engineering, which is generally considered to be among the highest professional distinctions accorded to an engineer. He received the Scientific and Technical Achievement Award in 1989 from the U.S. Environmental Protection Agency, and the Founders Award of the U.S. National Committee of the International Association on Water Pollution Research and Control in 1990. He received the Founders Award of the Association of Environmental Engineering and Science Professors in 2003. He also served on numerous committees for the U.S. Environmental Protection Agency and the National Research Council.

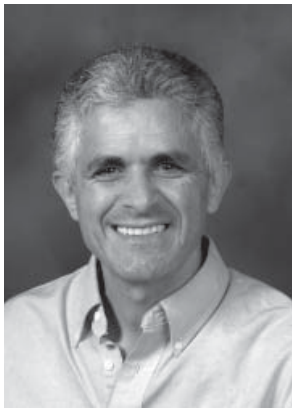
Johns Hopkins Professor Bill Ball, a former Ph.D. student of Paul's, stated, "Paul provided us not only with the tools, motivation and inspiration for making contributions to environmental engineering and science, but also with a poignant example of how one can balance professional excellence with a full and rich personal life. He was a life-long mentor and role model for many, always reminding us to 'do good while doing well.'"

Paul is survived by his Wife, Inge; their three children, Nina, Christopher, and Sebastian; and nine grandchildren. Family, friends, and colleagues gathered to celebrate Paul's life and to honor him at a memorial service at Stanford University's Memorial Church on February 22, 2006. The family has asked that those wishing to express their condolences with a gift may make a contribution to the Peninsula Open Space Trust.

Member News

Menachem Elimelech elected to National Academy of Engineering

Dr. Menachem Elimelech — the Roberto C. Goizueta Professor of Environmental and Chemical Engineering at Yale University — has been elected to the National Academy of Engineering "for contributions to the theory and practice of advanced filtration technologies for the treatment and reuse of potable water." Dr. Elimelech has played the leading role in building and directing Yale's Environmental Engineering Program. He is currently serving as Director of the program and Chair of the Chemical Engineering Department. He also serves on the Board of Directors of AEESP. Elimelech's other honors include the W.M. Keck Foundation Engineering Teaching Excellence Award, the Walter L. Huber Civil Engineering Research Prize of the American Society of Civil Engineers, the Outstanding Paper Award of the Association of Environmental Engineering and Science Professors, and the Excellence in Review Award of Environmental Science & Technology. In 2004, he received Yale's Graduate Mentor Award and in 2005 he received the Athalie Richardson Irvine Clarke Prize for outstanding achievement in water science and technology.



AEESP Member News

News items about AEESP members may be submitted for publication in the 'Member News' section by sending them to: Eric Marchand, AEESP Newsletter Editor, marchand@unr.edu.

Francis DiGiano wins A.P. Black Research Award

Professor Francis A. DiGiano has been awarded the A.P. Black Award from the American Water Works Association (AWWA) in recognition of outstanding research contributions to water science and water supply rendered over an appreciable period of time. This award was established in 1967 in honor of Dr. A.P. Black and is presented each year at the Open General Session of AWWA's Annual Conference and Exposition. Professor DiGiano's citation will read: "in recognition of his dedication to safe water, his commitment to the science of water, and for his excellence in educating tomorrow's water professionals."

Philip Singer receives Gordon Maskew Fair Award

Dr. Philip C. Singer, Dan Okun Distinguished Professor of Environmental Engineering at the University of North Carolina at Chapel Hill, was selected to receive the Gordon Maskew Fair Award for 2006 from the American Academy of Environmental Engineers. The award is presented to a Board certified Environmental Engineer of the Academy who is judged to have contributed substantially to the status of the environmental engineering profession by: (1) exemplary professional conduct, (2) recognized achievements in the practice of environmental engineering, and (3) significant contributions to the control of the quality of the world's environment.

The award will be presented at a luncheon at the National Press Club in Washington, DC on May 3, 2006.

Mira Olson joins Drexel University

Mira S. Olson has recently joined Drexel University's Department of Civil, Architectural and Environmental Engineering as an assistant professor. Mira completed her Ph.D. in environmental engineering at the University of Virginia and holds B.S. degrees in mechanical engineering and environmental sciences and engineering from Rice University. Her doctoral research involved studying bacterial motility and chemotaxis through porous media using MRI. She continued post-doctoral research in the Department of Environmental Sciences at the University of Virginia, studying nitrogen loading along the eastern shore of Virginia. Mira will be teaching courses in hydrology and groundwater. Her long-term research interests include studying bacterial responses to dynamic environments and environmental stresses, and using noninvasive imaging techniques to study NAPL dissolution, bacterial responses to microscale gradients, and bacterial interactions with soil surfaces.

News submissions deadline

The submissions deadline for the September 2006 AEESP Newsletter is **August 1, 2006.** Send news items to:

Eric Marchand
AEESP Newsletter Editor
marchand@unr.edu

Planning for a CLEANER Future with the WATERS Network

by Jami Montgomery, Executive Director, CLEANER Project Office

As population levels and the rate of urban development rise in the U.S., our society grows increasingly concerned with balancing the need to maintain water supplies of adequate quantity and quality for human use while preserving the integrity of aquatic ecosystems. Many surface waters in this country are impaired and multiple stressors such as over-fertilization of agricultural fields, discharges from wastewater treatment plants and industry, and urban/suburban runoff can impact the same waterbody. Mitigating just one of these situations often depends on understanding how it relates to others and how stressors can vary in temporal and spatial scales. And because many of these issues are tied to where people choose to live and how they earn their living, scientists and engineers must also factor in the social and economic impacts, not just environmental science, when considering solutions to these problems.

The goal of CLEANER (Collaborative Large-Scale Engineering Analysis Network for Environmental Research) is to transform and advance the scientific and engineering knowledge base in order to address the challenges of complex, large-scale, human-stressed environmental systems. As early as 2001, scientists and engineers began to discuss the need for such a network in order to enable them to better understand human-stressed environmental systems, their stressors, and the links between them. The idea of CLEANER evolved over the next four years as the Environmental Engineering Program at NSF sponsored workshops and a national symposium to gather community input. After the concept matured, NSF awarded 12 planning grants in 2004 to researchers at 22 institutions to conduct preliminary studies on the cyberinfrastructure and field facilities needed to make this network operational. And in July 2005, the Engineering Directorate at NSF awarded $2 million to a coalition of 12 institutions, led by the University of Illinois at Urbana-Champaign (UIUC) to establish the CLEANER Project Office. The project office is co-directed by Charles Haas of Drexel University, Jerald Schnoor of the University of Iowa, and Barbara Minsker of UIUC.

The CLEANER initiative shares several important characteristics with an NSF-funded hydrologic science initiative called Hydroview, which was developed by the Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI). Recognizing that the study of surface and groundwater processes and how anthropogenic inputs can affect human and environmental health cuts across scientific disciplines, NSF decided in 2005 that the two initiatives should be coordinated. Consequently, CLEANER and CUAHSI are combining efforts to seek Major Research and Equipment Facilities Construction (MREFC) funding in 2011 for a dual-purpose network called the WATer and Environmental Research Systems (WATERS) Network. By July 2007, the CLEANER Project Office and CUAHSI will produce an environmental engineering and hydrologic science research plan identifying cutting-edge scientific questions that the WATERS Network could address as well as an overall network design that includes research and education plans, timelines, milestones, and the scope of facilities, resources, and research required. With the construction of the WATERS Network, individual investigators will have an unprecedented opportunity to leverage data from laboratory investigations and single field sites with data collected nationwide and to collaborate with their colleagues in real-time on complex environmental research questions. The network will provide the opportunity for integrating research and education in environmental science and engineering. By providing access to professional communities that are focused on important aspects of environmental science, K-12, undergraduate, and graduate students can share and participate in the research. The CLEANER project office envisions that the WATERS Network will provide students and their instructors with shared knowledge, real data, and recent research findings.

To accomplish this grand vision, the Project Office has formed an advisory board and 6 standing committees on cyberinfrastructure, education, environmental engineering and science, organization, sensors, and social science and economics. These committees, led by an executive committee, include a broad range of academic disciplines including environmental engineering and science, social science, economics, education, and information and sensor technology. These committees are in the process of developing draft plans that will be available for public comment and community input in early 2007. For more information on CLEANER (and the WATERS Network) and to sign up for the CLEANER quarterly newsletter go to http://cleaner.ncsa.uiuc.edu.

Clemson's Environmental Health Physics Program

The Environmental Health Physics (EHP) focus area, an option in the Clemson University Environmental Engineering and Science Master of Science degree, has recently been accredited under the Accreditation Board for Engineering and Technology (ABET) Applied Science Accreditation Commission (ASAC). The origin of the EHP focus area dates back to 1980, and it is fully integrated with other focus areas within the graduate-only department. The EHP focus area integrates knowledge, skills, and abilities of radiological science with those of environmental engineering science; and it provides the basis for graduates to address contemporary issues in nuclear environmental engineering and science associated with anthropogenic and natural radioactivity. The objective of the curriculum is to provide students with knowledge and training needed to protect human health and the environment from ionizing radiation. The curriculum centers on a core of courses in environmental engineering and science: Environmental Chemistry, Environmental Microbiology, and Environmental Physical/Chemical Principles; as well as a core of health physics courses: Environmental Health Physics, Ionizing Radiation Detection and Measurements, Nuclear Fuel Cycle and Radioactive Waste Management, and Environmental Risk Assessment. The EHP faculty have been recognized nationally for their contributions to the profession, and their research efforts are well known in the discipline. Additional information about the program, admission criteria, and current research efforts can be found at http://www.ces.clemson.edu/ees or by contacting Dr. Timothy A. DeVol, CHP, at (864) 656-1014, tim.devol@ces.clemson.edu, or Dr. Robert A. Fjeld, (864) 656-5569, bob.fjeld@ces.clemson.edu.

CHAIR

Dept. of Civil and Environmental Engineering

University of Michigan

The Department of Civil and Environmental Engineering at the University of Michigan seeks applicants and nominations for the position of Department Chair. The Department currently has 27 full-time faculty members with 180 undergraduate and 130 graduate students. Graduate education leading to M.Eng., M.S., and Ph.D. degrees is conducted in a wide variety of topic areas including Construction Engineering and Management, Environmental and Water Resources Engineering, Geotechnical Engineering, Materials Engineering and Structural Engineering.

The qualified candidate should present a unifying vision for the department to steward its internationally renowned leadership and world class research strengths in civil infrastructure and environmental technology. He or she must also possess outstanding leadership and administrative capabilities, a vision for the field of civil and environmental engineering in the 21st century and a highly visible and accomplished record in research and teaching. The candidate should have strong abilities in promoting sponsored research programs, catalyzing new initiatives, leveraging the multidisciplinary educational and research culture of the university and interacting with government, industry and professional societies. The qualified candidate should be able to lead and support the faculty to ensure that learning of the highest quality flourishes at all levels, from undergraduate education to graduate research. The candidate should be able to work with a diverse group of faculty, staff, students and administrators to achieve common goals and to maintain rapport with alumni and industry representatives.

Applicants should submit a curriculum vitae that provides evidence of academic, administrative and leadership experience and a list of at least three references. In addition, applicants should include a one- to two-page narrative description of the candidate's views on education, research and the future of civil and environmental engineering. The position will be available as early as July 2006 and salary will be commensurate with qualifications. The screening of candidates will begin immediately and will continue until the position is filled.

Inquiries, applications or nominations should be addressed to Professor Lutgarde Raskin, Chair, CEE Chair Search Committee, Department of Civil and Environmental Engineering, 107 EWRE Building, 1351 Beal Ave., University of Michigan, Ann Arbor, MI 48109-2125, e-mail: raskin@umich.edu, phone: 734-647-6920.

The University of Michigan is an Equal Opportunity/Affirmative Action Employer and especially encourages womenand underrepresented minorities to apply.

University of Alberta

ASSISTANT OR ASSOCIATE PROFESSOR, ENVIRONMENTAL ENGINEERING. The Department of Civil and Environmental Engineering at the University of Alberta invites applications for a tenure-track faculty position commencing July 1, 2006 in the area of Environmental Engineering with focus on air quality. Preference will be given to applicants at the Assistant or Associate Professor level. Candidates must have a strong research interest in air quality in terms of outdoor and indoor air quality assessment, modeling and management as well as air pollution control. The successful candidate is expected to develop a strong independent research program that will focus on major outdoor and indoor air quality issues which exist in Alberta. Also, the ability of the candidate to incorporate research tools such as Geographical Information System (GIS), Remote Sensing (RS) and artificial intelligence will be considered an asset. The successful candidate is also expected to develop research collaborations through research projects with other researchers working in the areas of climate change, indoor air-duct system design and control, GIS and RS. With regard to teaching responsibilities, it is expected that the candidate will teach undergraduate and graduate courses in the area of Environmental Engineering, and assist in the teaching of other engineering courses at the undergraduate level. The successful candidate must hold a doctoral degree in Environmental Engineering and have a demonstrated commitment to teaching and research at the university level.

The University of Alberta, founded in 1908, is one of the largest universities in Canada with 34,000 undergraduate and 5,000 graduate students. The Faculty of Engineering has over 3,200 undergraduate and 1,100 graduate students, of which over 700 undergraduate and 400 graduate students are in the Department of Civil and Environmental Engineering. The Department of Civil and Environmental

Engineering offers B.Sc., M.Eng., M.Sc., and Ph.D. programs. The Environmental Engineering program has more than 70 graduate students and eight full-time faculty members. The program houses a Canada Research Chair in Environmental Engineering. The technical staff of the Environmental Engineering program is comprised of three technicians who assist in teaching and research activities.

The University is situated in the heart of Edmonton on the banks of the North Saskatchewan River. Edmonton has a population of over 900,000 people, and offers a diverse array of cultural and sporting activities year round. The city has one of the lowest costs of living in Canada. The Rocky Mountain National Parks of Jasper and Banff are readily accessible from Edmonton by modern express highways, providing access to some of the finest skiing, kayaking, cycling, camping, backpacking and fishing in the world.

Applicants should send a curriculum vitae including employment history, citizenship status, a statement concerning research and teaching interests, names and contact information for at least three referees, and samples of refereed publications to:

Dr. J.J. R. Cheng, P.Eng.
Chair & CW Carry Professor of Steel Structures
Department of Civil & Environmental Engineering
University of Alberta
Edmonton, Alberta, Canada
T6G 2W2
Fax: (780) 492-0249
E-mail: jaimelyn@ualberta.ca
Web site: www.engineering.ualberta.ca/civil

The Selection Committee will begin to review applications on April 1, 2006, but the search will remain open until a suitable candidate has been appointed.

All qualified candidates are encouraged to apply; however, Canadians and permanent residents will be given priority.

The University of Alberta hires on the basis of merit. We are committed to the principle of equity in employment. We welcome diversity and encourage applications from all qualified women and men, including persons with disabilities, members of visible minorities, and Aboriginal persons.

Montclair State University

DOCTORAL OPPORTUNITIES IN ENVIRONMENTAL MANAGEMENT. Montclair State University, New Jersey's second largest university, located in a cosmopolitan suburb 15 miles from Manhattan and an hour drive from both the Appalachian Trail and the New Jersey shore, now offers a Doctoral degree in Environmental Management. Our program focuses on three inter-locking themes, (i) Water-Land Systems, (ii) Sustainability, Vulnerability, and Equity and (iii) Modeling and Visualization. Graduate Assistantships are available to qualified full-time students which include full fee waivers and a 10-month stipend of $15,000. Applications for admission close on October 15, 2006. Information about our program can be found at our Web site at http://www.csam.montclair.edu/degrees.html. Inquiries should be directed to Prof. John Taylor at (973) 655-7273.

Student Opportunities

STAFF RECRUITMENT CLASSIFIED ADVERTISEMENT

JOB OPENING

Geochemistry/Biogeochemist Post-Doctoral Visiting Fellowship/Savannah River National Laboratory

Qualifications: Post-Doctoral Visiting Fellowship position in Environmental Geochemistry

Description: The Environmental and Chemical Processing Technology is looking for candidates to conduct research for a large program designed to resolve environmental chemistry problems related to remediation, monitored natural attenuation, and the disposal of radioactive waste in the subsurface. Candidates must possess strong laboratory skills, working knowledge of chemical speciation modeling, and hands-on experience with some solid phase spectroscopic or microscopic techniques. We have a strong interest in candidates with a background in microbiology, surface/colloid chemistry, redox chemistry, radiochemistry, or nano-sciences.

Interested persons should send a letter stating their interest in the position, curriculum vitae, unofficial academic transcripts, and names of three references to:

SRS savannah river site

Ms. Bernice Bryant | Washington Savannah River Company | Human Resources Staffing | Bldg. 703-47A, Room 122 | Aiken, South Carolina 29808 | Tel (803) 725-8408 | Email: Bernice.bryant@srs.gov

Only U.S. Citizens need apply. The Savannah River National Laboratory is an AA/EO/ADA employer and does not discriminate in employment or the provision of services on the basis of disability.

AEESP members

Send address changes to:

Joanne Fetzner
AEESP Business Office
2303 Naples Court
Champaign, IL 61822

4th International Slow Sand/Alternative Biological Filtration Conference

May 3-5, 2006
IWW-Mulheim, Germany

The 4th International Slow Sand/Alternative Biological Filtration Conference at IWW-Mulheim, Germany will be held May 3-5, 2006. Conference themes will include biofilter comparisons between slow sand filtration, riverbank filtration, biological activated carbon, rapid biological filtration, soil-aquifer treatment and groundwater recharge; emerging contaminant and removal issues; biological process mechanisms/characterizations in a drinking water treatment context; emerging process modifications and applications; modeling advances; and future research needs. Researchers from 23 countries will be presenting. This conference is truly an international enterprise and such collaborative efforts are just one reason why biological filtration will continue its worldwide evolution. Program guide and registration material may be found at www.biofiltration-con2006-iww.com. Additional inquires can be made to conference organizers: R. Gimbel (r.gimbel@iww-online.de), N.J.D. Graham (n.graham@imperial.ac.uk), and M.R. Collins (robin.collins@unh.edu).

SBR Wastewater Treatment Short Course

June 19-20, 2006
Marquette University
Milwaukee, Wisconsin

A short course titled "Sequencing Batch Reactor (SBR) Wastewater Treatment" will be held on June 19 and 20, 2006 at Marquette University in Milwaukee, Wisconsin. The course will present SBR design considerations, operating strategies, SBR equipment information, and activated sludge theory. Practical experiences of operators and designers will also be highlighted with case studies of SBR systems and a description of SBR installations around the world. Attendees will receive 1.5 continuing education units (CEUs) or 15 professional development hours (PDHs) for professional engineering continuing education requirements. The course has been offered over the last five years, and has been well-received by past attendees, including graduate students. To help foster environmental engineering education, five fellowships to cover course registration will be offered to full-time graduate students with financial need. The fellowship will cover the course registration. Interested graduate students are encouraged to apply. For more information, please contact Dr. Dan Zitomer, (414) 288-5733 (Daniel.Zitomer@mu.edu) or see http://www.eng.mu.edu/SBR_course.

IWA Publishing

New Books from IWA Publishing

Advanced Biological Treatment Processes for Industrial Wastewaters

Principles & Application
Editors: F Cervantes, S Pavlostathis, A van Haandel
This book provides unique information relative to both the principles and applications of biological wastewater treatment systems for industrial effluents, as well as case studies documenting the application of biological wastewater treatment systems in different industrial sectors.
Integrated Environmental Technology Series
ISBN: 1843391147 · May 2006, 416 pages
Hardback · Full Price: US$160.00 / £80.00
http://www.iwapublishing.com/template.cfm?name=isbn1843391147

Strategic Planning of Sustainable Urban Water Management

Authors: P-A Malmqvist, G Heinicke, E Kärrman, TA Stenström, G Svensson
This book synthesises results of projects from the Urban Water programme and presents a comprehensive approach, which includes not only the technical, economic and environmental aspects, but also the challenges of institutional capacity and public participation in the planning process.
ISBN: 1843391058 · May 2006 · 284 pages
Hardback · Full Price: US$140.00 / £70.00
http://www.iwapublishing.com/template.cfm?name=isbn1843391058

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NOTE: The AEESP membership application is also available online at **http://www.aeesp.org/org/membership.html**.

Application for Membership

Association of Environmental Engineering and Science Professors

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PLEASE ATTACH A BRIEF (1-3 PAGE) CURRICULUM VITAE

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. Upon retirement, members may apply to the AEESP Board for Emeritus membership if they have been AEESP members for at least 20 years, or have been a member for fewer years but have contributed substantially to AEESP through service on committees or as an officer.

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

Kimberly L. Jones
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Enclosed are my AEESP dues in the amount of U.S. $_____.

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Please send submissions and comments to: Eric Marchand, AEESP Newsletter Editor, University of Nevada, Reno, Civil & Environmental Engineering MS 258, Reno, NV 89557-0152; phone: (775) 784-6817; fax: (775) 784-1390; e-mail: marchand@unr.edu. To estimate the amount of lead time needed for your announcement, please note that members receive the newsletter 4-6 weeks after the submissions deadline.

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