Association of Environmental Engineering and Science Professors

Newsletter

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President's Letter

As I sit in my office waiting for a Nor-easter to hit and hoping that the inspiration for this letter arrives first, my eye catches a glimpse of my first engineering textbooks, and my mind drifts off to thoughts of why many of us chose to enter this profession. Some were no doubt drawn to the profession by their sense of environmental advocacy, some as a result of the unique integration of science, math and engineering disciplines, and others through serendipity. In many cases it was a combination of these factors. Whichever it may have been, the members of our organization have a fiduciary responsibility to fully develop the environmental engineering brain trust of the nation. The majority of practicing environmental engineers in the U.S. were trained under the guidance of our members, and as such, we should accept, for better or for worse, some credit and responsibility for their actions. We take pride in insuring that our students have a strong foundation in engineering fundamentals, but we must also insure that they are equally cognizant of their social responsibility. If the environmental engineering profession as a whole, and we as the members of the academy, are not strong advocates for scientifically sound and environmentally responsible policies and decisions then to whom do we abdicate? The politicians? The lawyers? The advocacy groups?

In the last several years, AEESP has stepped beyond its traditional role and has begun to acquire a more nationally influential stature. I would like to share with you some of the exciting initiatives that we are now pursuing.

Building on the momentum engendered by Kim Gray and Robin Autenrieth through the establishment of a Washington presence in the form of KAR Associates, our lobbying agent, AEESP for the first time will be nominating to the Presidential transition team names of accomplished and respected environmental engineers for top environmental posts (e.g. EPA, CEQ) in the new administration. In a separate letter to the transition team, the American Association of Engineering Societies will also endorse our slate of candidates. Further, Davis Ford, the new president of the American Academy of Environmental Engineers, recently called me to discuss potential interactions over the coming year with particular interest in working together to place appropriate, well qualified individuals in top government posts. I look forward to working with Davis and his AAEE colleagues on this and many other important issues.

In February or March, AEESP, in association with AAES, AIChE, ASCE, and ASME, will be sponsoring a congressional briefing on Capitol Hill addressing the environmental implications of nanotechnology and genome related research.

Sustainable development has become the paradigm within which all engineering disciplines are beginning to redefine themselves. Since the concepts of sustainable development have such important and broad implications for the environment, I suggested that AEESP lead the AAES sustainable development efforts. If we do not capitalize on this opportunity, I fear that there is a strong possibility that we (environmental engineers) will be marginalized in these initiatives (as evidenced by Brad Allenby's recent article in *ES&T*, **34**:422A, 2000). AAES is very interested in our participation and has requested that an AEESP member chair their Environment Committee.

(continued on page 2)

Format for Newsletter submissions

Please note that the preferred file format for newsletter submissions is Microsoft Word. Photos, logos and other images should be in .tif format. Photos may be sent as prints or scanned at 300 dpi resolution. Please identify all subjects in photographs and provide names, dates, event and location.

Submissions should be sent to Roger Ely, AEESP Newsletter Editor, roger.ely@yale.edu, Department of Chemical Engineering, P.O. Box 208286, Yale University, New Haven, CT 06520-8286; phone (203) 432-4386; fax (203) 432-2881.

Letters to the President may be addressed to:

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(continued from page 1)

In an effort to further extend the influence of our membership, KAR will also be helping us open a dialogue with the major environmental groups (e.g., Environmental Defense, Natural Resources Defense Council) informing them about the expertise available through our organization and discussing possible areas of collaboration.

The Association of Environmental Health and Science recently invited us to form a strategic partnership. In a very welcoming letter, Paul Kostecki, Executive Director of AEHS, outlined a myriad of benefits deriving from this partnership. The Board will be discussing this suggestion at its next meeting.

Creation of new knowledge to support the practice of environmental engineering is, of course, another important area that binds us all together. As was mentioned in the last Newsletter, Nick Clesceri has replaced Ed Bryan at NSF. Nick visited our Board meeting in Anaheim and discussed expanding and creating opportunities for environmental engineering research at NSF. I am planning to meet with Nick and Fred Thompson (also a Program Director at NSF) next week while I am in Washington to discuss further opportunities.

Of course the education of our students and the creation of new knowledge are inextricable. This sense of unity in our mission as faculty members is underscored by the theme of our next conference, which will combine previously separated education and research topics. We received four outstanding proposals to host this conference and after much discussion, the University of Toronto was selected as the venue for the next conference to be held in 2002.

As I was writing this letter, I received an e-mail message from Byung Kim notifying me that Ford Motor Company will be the newest addition to our distinguished list of sustaining members.

These are exciting times for AEESP and I am delighted and honored to serve as President for the coming year. I hope that my efforts during my term as President will help our members in a meaningful way. Best wishes for a happy and productive year.

Domenico Grasso

AEESP members, please share items of professional achievement with other AEESP members...

Send a brief note via e-mail to:
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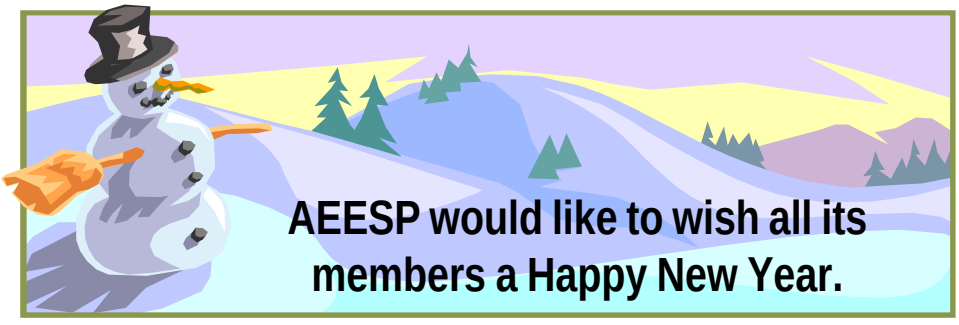


Board Highlights

- The AEESP Board of Directors held its semi-annual meeting on October 14 and 15 in Anaheim, the site of the annual WEFTEC conference. For the first time, a pre-meeting orientation session was held for the new Board members (Kim Hayes, Susan Larson and Catherine Peters; Susan attended by conference call). Also attending the full Board meeting were Kimberly Gray (Past President), Robin Autenrieth (President), Dom Grasso (Vice President), Jerry Speitel (Treasurer), Kurt Patterson (Secretary), Mike Aitken, Lisa Alvarez-Cohen, John Novak, and Sue Powers.

- Next year's officers elected on the first day of the meeting were: President--Dom Grasso; Vice President--Mike Aitken; and Secretary--Kim Hayes. Jerry Speitel will continue in his role as Treasurer for another year, and Lisa Alvarez-Cohen will take over from Debra Reinhart as Communications Coordinator.

- The Board agreed to extend its contract with AEESP's business manager, Joanne Fetzner. Joanne performs a wide range of invaluable services for AEESP members and for the Board, and has become our institutional memory. Her new contract includes an increase in service from 10 to 12 hours per week.

- Our membership continues to grow, at a time when many other professional organizations are experiencing substantial declines in membership. Thanks for your support of AEESP!

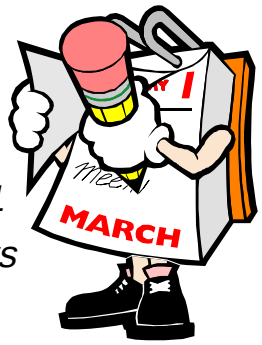
- Updating and re-organization of some standing committees was discussed. The Graduate Register and Undergraduate Register committees will be merged, and the Electronic Communication and Education committee will be restructured as an Internet Resources committee (the remainder of the current committee's functions will be subsumed by the Education committee). The committee will be charged with the planning, development and maintenance of the AEESP web site, email system, and future Internet-based resources. The web site is undergoing a complete overhaul, which should be complete in the near future. Our thanks to Kurt Patterson for his efforts "above and beyond" in creating and managing these services.

- The Board selected the University of Toronto to host the 2002 AEESP/AAEE Conference on Environmental Engineering Research and Education. Four proposals to host the conference had been received and were evaluated by a joint AEESP/AAEE committee. The Board's decision was affirmed by the AAEE Executive Committee later that day.

- The Board was visited by Nick Clesceri, the National Science Foundation's new Program Director for Environmental Engineering in the Bioengineering and Environmental Systems Division. As a long-time member of AEESP, Nick is familiar with the needs and concerns of the environmental engineering and science community with respect to representation within NSF. He noted the availability of a new National Research Council report titled *Grand Challenges in Environmental Sciences* (the pre-publication version of the report can be viewed on-line at http://www.nap.edu/books/0309072549/html/). Our efforts to provide a voice for environmental engineering in NSF decision-making led to the appointment of Dick Luthy as a representative on the Advisory Committee for Environmental Research and Education. Nick also discussed NSF's interest in increasing communication between engineers and scientists, particularly ecologists.

March 1, 2001

is the submissions deadline for the April 2001 AEESP News



2000 AEESP Awards

The following awards were presented by AEESP President Robin Autenrieth, except as noted:

AEESP Outstanding Teaching Awards

AEESP/McGraw Hill Award for Outstanding Teaching in Environmental Engineering and Science
Amy K. Zander, Clarkson University

AEESP/Wiley Interscience Award for Outstanding Contributions to Environmental Engineering and Science Education
Steven C. Chapra, Tufts University

Malcolm Pirnie/AEESP Frontier of Research Award

Bruce E. Logan, The Pennsylvania State University

2000 Founders' Award

For Sustained and Outstanding Contributions to Environmental Engineering Education
Walter J. Weber Jr.

2000 Outstanding Publication Award

A landmark Environmental Engineering paper that has withstood the test of time
"Design Considerations for GAC Treatment of Organic Chemicals." ***JAWWA*****, 79 (1) 74-82 (1987).**
John C. Crittenden, David W. Hand, Harish Arora and Benjamin W. Lykins, Jr.

AEESP Distinguished Service Awards

Elizabeth Carraway
For outstanding service on the AEESP thesis committee (1998-2000)

Thomas M. Holsen
For outstanding service on the AEESP dissertation committee (1998-2000)

Marc Edwards
For outstanding service as the AEESP Awards Committee Chair (1997-2000)

Kurt Paterson
For outstanding service as the AEESP Secretary

Deb Reinhart
For outstanding service in AEESP Communications

Keith Strevett
For outstanding service to faculty and students in updating the graduate register and making it available electronically

Roger Ely and Cindy Lawrence
For outstanding service in publishing the AEESP newsletter

Craig D. Adams
For outstanding service to the AEESP Awards Committee and 2000 Survey

Robin L. Autenrieth
For outstanding service as the AEESP President from 1999-2000
Presented by incoming AEESP President Domenico Grasso

AEESP/CH2M Hill Outstanding Doctoral Dissertation Award

"Kinetics and Pathways of Chlorinated Ethylene and Chlorinated Ethane Reaction with Zero-Valent Metals"
William A. Arnold
Advisor: A. Lynn Roberts

AEESP/Parsons Engineering Science Outstanding Doctoral Dissertation Award

"Competition Between Phosphate and Glycogen Accumulating Bacteria: Stoichiometry, Kinetics and the Effects of pH"
Carlos Filipe
Advisor: C. P. Leslie Grady, Jr.

AEESP/Montgomery-Watson Master's Thesis Award

Influence of air channel spacing, porous media type, and airflow rate on NAPL volatilization during air sparging
First place: Shane William Rogers
Advisor: Say Kee Ong

Ammonia-oxidizing bacteria: inactivation kinetics in chloraminated water and a method for their rapid enumeration
Second Place: Patrick S. Oldenburg
Advisor: Daniel Noguera

Montgomery-Watson Consulting Engineers M.S. Thesis Awards

Entries are sought for the 2001 Montgomery-Watson Master's Thesis Awards. First and second place awards will be made, each consisting of a plaque and a cash prize for both the student and the faculty advisor. The cash prize for the first place award is $600 for the student and $300 for the faculty advisor, while the cash prize for second place is $400 and $200, respectively. Faculty advisors wishing to nominate a student for this competition should send three copies of the thesis to: Fred S. Cannon, Chair, AEESP M.S. Thesis Committee, Civil and Environmental Engineering, The Pennsylvania State University, 212 Sackett Building, University Park, PA 16802-1479. The submission should be accompanied by a simple letter of transmittal stating 1) the address, e-mail and phone number for the student and advisor, 2) an indication as to when the thesis was completed, and 3) a concise statement defining the student's intellectual contribution to the work. The latter statement is especially important if multiple authors contributed to the work under consideration. The copies will not be returned, so inexpensively bound xerographic copies are recommended. The deadline for submission is March 15, 2001 for theses completed during the 2000 calendar year. Faculty advisors are urged to limit themselves to a single entry—self nominations by students will not be accepted.

A selection committee of three AEESP members will read and judge each thesis. Each thesis is evaluated based on 100 points allocated to the following major categories: Scientific and Technical Merit (46 pts.), Originality of Research (15 pts.), Contribution to the Advancement of Environmental Engineering (15 pts.) and Clarity of Presentation (24 pts.).

Selections will be made by September so that the recipients and their advisor can be invited to the AEESP meeting at the WEF annual meeting. Our thanks to Montgomery-Watson for their generosity in sponsoring these awards and to the members of the 2000 M.S. Thesis Review Panel: Elizabeth Carraway (Chair), Fred Cannon and Lut Raskin.

AEESP Outstanding Paper Award

Nominations are sought for the 2001 AEESP Outstanding Paper Award for a "landmark paper that has withstood the test of time." Nominators should send a copy of the paper and a letter (two pages maximum) to the chair of the awards committee: Brian A. Dempsey, Chair, AEESP Awards Committee; The Pennsylvania State University; 212 Sackett Building; University Park, PA 16802-1479. Brian's e-mail address is: bad5@psu.edu. The letter should give the citation, the reasons why the paper has been considered a "landmark," and a description of the influence the paper has had on the practice of environmental engineering. Nomination must be made before March 15, 2001 by members of AEESP who are not an author or co-author of the paper.

According to the current rules of the competition, any author of a winning paper is ineligible in the competition for a period of three years, and at least one of the authors must be living. The winners since 1996 are:

1996 Rajamani Rajagopalan and Chi Tien, "Trajectory Analysis of Deep-Bed Filtration with the Sphere-in-cell Porous Media Model," AIChE Journal, 22, 523-533, 1976.

1997 Amirtharajah, A. and K.M. Mills, "Rapid-Mix Design for Mechanisms of Alum Coagulation," Journal Amer. Water Works Assn., 74 (4) 210-216, 1982.

1998 Bouwer, E.J., and P. McCarty, "Removal of trace chlorinated organic compounds by activated carbon and fixed-film bacteria," Environmental Science & Technology, 16 (836-843) 1982.

1999 Chiou, C.T., L.J. Peters and V.H. Freed, "A Physical Concept of Soil-Water Equilibria for Non-Ionic Compounds," Science (206)16 831-832 (1979).

1999 Sposito, G., "The Operational Definition of the Zero Point of Charge in Soils," Soil Sci. Soc. Am. J., V. 45, 292 (1981).

2000 Crittenden, J. C., D. W. Hand, H. Arora and B. W. Lykins, Jr., "Design Considerations for GAC Treatment of Organic Chemicals," JAWWA, 79 (10) 74-82 (1987).

Please take a few moments to reflect on the papers that you think have had the greatest impact on environmental engineering and consider nominating one for this award. Note that papers in all areas of environmental engineering, including air pollution, water quality, solid waste, hazardous waste, etc., are eligible.

CH2M Hill and Parsons Engineering Science Doctoral Dissertation Awards

CH2M Hill Outstanding Doctoral Dissertation Award

Entries are sought for the 2001 AEESP Outstanding Doctoral Dissertation Awards. Two awards will be given, each consisting of a plaque and a cash prize of $1000 for the student, and a plaque and a cash prize of $500 for the faculty advisor. Faculty advisors wishing to nominate a dissertation should send three copies to: Paige Novak, Chair, AEESP Dissertation Committee, Civil Engineering, University of Minnesota, 122 Civ E, 500 Pillsbury Drive S.E., Minneapolis, MN 55455-0220. They should be accompanied by a simple letter of transmittal stating 1) the current address, e-mail and phone number for the student and advisor, 2) an indication as to when the thesis was completed, and 3) a concise statement defining the student's intellectual contribution to the work. The latter statement is especially important if multiple authors contributed to the work under consideration. The copies will not be returned, so inexpensive xerographic copies are recommended. The deadline for submission is March 15, 2001 for dissertations completed during the 2000 calendar year. Faculty advisors are urged to limit themselves to a single entry (which will be considered for each of two awards); self nominations by students will not be accepted.

A selection committee of three AEESP members will read and judge each dissertation on the basis of 100 points allocated as follows: scientific and technical merit of the research--30 points; originality of research--30 points; contribution to advancement of environmental engineering--30 points; and, clarity of presentation--10 points. The selections will be made by September so that the recipients and their advisor can attend the AEESP awards ceremony at the WEF annual conference. Our thanks to Parsons Engineering Science and CH2M-Hill for their generosity in sponsoring these awards and to members of the Doctoral Dissertation Review Panel: Thomas Holsen (Chair), Paige Novak, and Daniel Noguera.

AEESP Founders' Award

Walter Weber, Jr. was awarded the 2000 AEESP Founders' Award at the Annual Meeting. This award is given annually to recognize an AEESP member who has made "sustained and outstanding contributions to environmental engineering education and the profession."

To make a nomination for the 2001 AEESP Founders' Award, contact the chair of the awards committee: Brian A. Dempsey, Chair, AEESP Awards Committee; The Pennsylvania State University; 212 Sackett Building; University Park, PA 16802-1479. Brian's e-mail address is: bad5@psu.edu. After careful consideration of nominees by an AEESP subcommittee, the 2001 award will be presented at the annual October meeting.

Outstanding Educator Awards

The stated purpose of these awards is "to honor individuals who are making outstanding contributions to the teaching of environmental engineering, both at the individual's home institution and beyond." The selection process for the "Outstanding Teaching…" award will favor nominations of faculty at the assistant and associate professor level who are actively teaching large undergraduate classes and developing innovative instructional methods, although all nominations will be considered. The selection process for the "Outstanding Contribution…" award will place less emphasis on academic rank, and more emphasis on the development of innovative methods, including the dissemination of such methods to peers. Only members of AEESP are eligible to receive either award. An individual may receive either award only once; previous winners are ineligible. Each award will consist of a plaque and a check for $1000, to be presented at the WEFTEC Conference in October.

The nomination package should include the following items: a) a resume, preferably tailored to highlight contributions to environmental engineering education ; and b) any relevant information related to teaching not included in the resume. Moreover, some of the following additional materials will

be helpful in judging the candidate's qualifications for these awards: a) input from undergraduate and graduate students; b) summary teaching evaluations by faculty and/or students; c) supporting letters from colleagues intimately familiar with the nominee's contributions to environmental engineering education; d) demonstrated innovation and success in teaching; and e) demonstrated effort at dissemination of methods to the academic community. Letters from colleagues outside the nominee's home institution documenting application of software, innovative teaching ideas, textbooks, course notes, mentoring or other significant contributions will be given special consideration in this analysis. A single nomination package will be automatically considered for both awards in 2001.

The deadline for nominations to receive full consideration is March 15, 2001. Nominations can come from either former students or professional colleagues, and should be sent to: Brian A. Dempsey, Chair, AEESP Awards Committee; The Pennsylvania State University; 212 Sackett Building; University Park, PA 16802-1479. Brian's e-mail address is: bad5@psu.edu.

Malcolm Pirnie/AEESP Frontier Award in Research

The stated purpose of the Frontier Award is "to honor an individual who has advanced the environmental engineering and science field through recognized research leadership and pioneering efforts in a new and innovative research area." All AEESP members are eligible for this award. The award consists of a plaque and a cash prize of $1000 to be presented at the WEFTEC Conference in October. Only AEESP members are eligible to nominate candidates. The deadline for nomination will be March 15, 2001 for full consideration by the AEESP Awards Committee. Nominations should be submitted to: Brian A. Dempsey, Chair, AEESP Awards Committee; The Pennsylvania State University; 212 Sackett Building; University Park, PA 16802-1479. Brian's e-mail address is: bad5@psu.edu. Those making nominations must submit a supporting statement plus selected literature citations detailing the nominee's contribution to the new and innovative research for which the nominee is being honored.

2001 AEESP Distinguished Lecturer

TO: Potential Hosts of AEESP Distinguished Lecturer
FROM: Makram T. Suidan, Chairman, AEESP Distinguished Lecturer Committee
SUBJECT: Sponsorship of the Year 2001 AEESP Distinguished Lecturer tour by Dr. Vernon L. Snoeyink

Dr. Vernon L. Snoeyink is the Ivan Racheff Professor of Environmental Engineering, Department of Civil and Environmental Engineering, University of Illinois, Urbana, Illinois 61801. He has devoted most of his career to the study of fundamental as well as applied issues pertaining to drinking water. He has published extensively on all aspects of activated carbon adsorption and is also author to several textbooks on drinking water treatment and environmental chemistry. He is the recipient of several awards and honors, including the AEESP Founders' Award, and is a member of the National Academy of Engineering.

Dr. Snoeyink has provided two possible seminars for his tour. These are:

Seminar 1. Adsorption of Trace Organic Compounds from Drinking Water Supplies. Trace organic compounds such as pesticides and odor-causing compounds are frequent contaminants of drinking water supplies. The removal of these substances by porous adsorbents is complicated by the presence of natural organic matter. Concentrations of NOM are frequently 10^3 to 10^6 times larger than those of the trace compounds. The size and molecular characteristics of NOM result in competition for the same adsorption sites as well as pore blockage, and the pore size distribution of the adsorbent determines the type and extent of the competition. Data from studies with controlled pore size adsorbents that show these effects will be presented. If the amount of pore blockage by NOM is small, the quantity of trace compound adsorbed can be estimated by using the very useful Remaining Concentration versus Carbon Dose plots that are independent of the initial concentration of the trace compound. Hybrid membrane processes and solids contact reactors provide a means for efficient adsorption of trace compounds. Data to be presented show that pulse addition of activated carbon to ultrafiltration systems (PAC-UF Process) yields more efficient use of the carbon than continuous addition, for example. Other data to be discussed show that the amount of trace compound adsorbed by carbon in solids contact reactors is significantly reduced by a strongly-competing fraction of NOM if the residence time of the carbon is too long.

Seminar 2. Drinking Water Quality Deterioration in Water Distribution Systems: Colored Water Formation and Its Control. Drinking water quality in distribution systems may deteriorate via chemical, biological and hydraulic phenomena. The iron scales on unlined cast iron pipes are especially troublesome because they adversely affect system hydraulics and they cause the formation of red or yellow water. Data from our recent

studies of water distribution system scales will be presented that show the presence of a reservoir of Fe(II) near the pipe wall, which is separated from bulk water in the pipe by a shell-like iron layer consisting of the minerals goethite and magnetite. Our results show that iron is released from these scales as Fe(II) when oxygen- and disinfectant-free zones of water develop next to the scale. Fe(II) encounters oxygen or disinfectant as it moves into the bulk water, and it is oxidized to form ferric hydroxide particles that increase turbidity and impart a yellow-to-red color to tap water if they are present in sufficient concentration. The chemical composition of the water plays an important role in determining the amount of turbidity and color that form. The particles that form may be transported directly to the consumers tap, or they may settle in the pipe until they are resuspended by a hydraulic surge. The pros and cons of several control measures, such as pH and alkalinity control, oxidant concentration control, flushing, and pigging will be discussed with reference to our knowledge of the red water formation mechanism.

Institutions interested in hosting Dr. Snoeyink should send a letter request with appropriate documentation by January 15, to: Makram T. Suidan, Chair, AEESP Distinguished Lecturer Committee, Department of Civil and Environmental Engineering, University of Cincinnati, Cincinnati, OH 45221-0071; Email: makram.suidan@uc.edu; Telephone: (513) 556-3695; Fax: (513) 556-2599. This request should include the following information:

1. Name and address of host institution and contact person.
2. Identify which of the two seminars is requested.
3. Identity and address of possible co-sponsors.
4. Arrangements for publicity, accommodations and possible videotaping of lecture.
5. A brief statement describing how a visit by Dr. Snoeyink would benefit and complement current academic activities.

Expenses associated with the lecture tour are shared by the host institution on a total lump sum, fixed cost basis. It is estimated that each institution would contribute approximately $850 to cover travel and living expenses, as well as provide a modest honorarium. Responsibility for final choice of the lecture tour will rest with the AEESP Distinguished Lecturer Committee who will make that selection on the basis of information received. Special consideration will be given to institutions who have not been visited by the Distinguished Lecturer within the past year or two, the research and teaching focus at the candidate institutions, and the possibility of having more that one institution co-host the event.

The members of the AEESP Distinguished Lecturer Committee are pleased with the prospect for another successful tour and look forward to timely receipt of invitations to participate as hosts.

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Carnegie Mellon University

David Dzombak, Professor of Civil and Environmental Engineering at Carnegie Mellon University and former member of the AEESP Board of Directors, has been named as one of 20 Fellows for the year 2000 in the Aldo Leopold Leadership Program (http://www.leopold.orst.edu). The Leopold Leadership Program is aimed at mid-career environmental scientists who are active in research and teaching, and who desire to take a leadership role in communicating environmental science more broadly. Dzombak is the first environmental engineer to be chosen. Fellows attend two separate one-week workshops for intensive study in five areas:

- Providing leadership within the scientific community
- Providing scientific input to the policy process
- Communicating with the news media
- Interacting with the corporate sector
- Working with non-governmental organizations

The program is administered by Oregon State University, affiliated with the Ecological Society of America, and supported by the David and Lucile Packard Foundation.

For further information, contact:
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University of Cincinnati

Dionysios D. Dionysiou (dionysios.d.dionysiou@uc.edu) has been appointed as an Assistant Professor (tenure-track) of Environmental Engineering, Department of Civil and Environmental Engineering, University of Cincinnati. Professor Dionysiou will receive his Ph.D. in Environmental Engineering from the University of Cincinnati in March 2001. His Ph.D. thesis concerns development and evaluation of novel photocatalytic reactors for the destruction of organic contaminants in water. He obtained a Diploma (B.S./M.S., 1991) from the National Technical University of Athens, Greece and a M.S. (1995) from Tufts University, both in Chemical Engineering. Professor Dionysiou has industrial experience with W. R. Grace, Masonry Products Division where he performed research on investigating the effects of non-ionic and ionic surfactants on the stabilization of colloidal systems used in construction products. His research interests include advanced oxidation technologies for water treatment, drinking water treatment and purification, membrane processes, preparation of environmentally benign materials, physicochemical phenomena on particle-water interfaces, development of innovative photocatalytic reactors for water purification, and the use of ionic liquids in environmental applications. At the University of Cincinnati, Professor Dionysiou will teach graduate courses in the field of Advanced Unit Operations for the Treatment of Drinking Water and Wastewater, Physical-Chemical Processes for Water Quality Control, Advanced Oxidation Technologies, and a graduate laboratory course on Unit Operations and Process Monitoring for the Treatment of Polluted Water and Air Purification.

Daniel B. Oerther (Daniel.Oerther@uc.edu) has joined the faculty of the Department of Civil and Environmental Engineering at the University of Cincinnati. Professor Oerther will receive his Ph.D. in Environmental Engineering from the University of Illinois at Urbana-Champaign in 2001. His work with Professor Lutgarde Raskin used molecular tools to examine the ecology of *Gordonia* spp. in activated sludge foaming and the ecology of *Acinetobacter* spp. in activated sludge systems operated for biological phosphorus removal. In 1999, Professor Oerther received the AEESP/Montogomery Watson M.S. Thesis Award for his thesis entitled, "Application of Molecular Tools for the Analysis of Biological Foaming in Activated Sludge." At the University of Cincinnati, Professor Oerther will continue his work in the emerging field of water quality biotechnology. He will teach Introduction to Environmental Engineering, Environmental Chemistry and Microbiology, and an advanced graduate laboratory, Molecular Methods in Environmental Engineering. Professor Oerther's research will continue to integrate novel methods from molecular microbiology with fundamental principles of microbial ecology to understand and improve the design and operation of natural and engineered microbiological systems. His broad research interests include the transmission of infectious disease, bioremediation of contaminated ground water, biological stabilization of potable water, advanced wastewater treatment, and nutrient recovery.

Associate Professor **George A. Sorial** (George.Sorial @uc.edu) joins the Department of Civil and Environmental Engineering at University of Cincinnati where he was a Research Associate Professor for four years. Professor Sorial received his Ph.D. from the University of Bradford, United Kingdom in 1982. He has over 15 years of experience in bench scale and pilot scale research. He has published over 25 referred journal articles and has made over 30 presentations at national and international conferences. He received the Honor Roll Professor Award for Teaching from the College of Engineering in Feb-

ruary of 2000. His research interests focus on activated carbon adsorption, modeling of adsorption systems (equilibrium and dynamics), biofiltration processes for treatment of contaminated air, bioremediation of contaminated soils, development of protocols for the U.S. EPA on effectiveness of surfactants in the remediation of oil spills, and electrochemical reductive processes for treatment of ammunition wastewater. Professor Sorial's teaching interests include aquatic chemistry, advanced topics on environmental chemistry, and an advanced graduate course, Environmental Instrumentation Laboratory. He is a member of American Water Works Association, Water Environment Federation, Air & Waste Management Association, International Association on Water Quality, American Institute of Chemical Engineers, American Society of Civil Engineers and American Chemical Society. He is currently an associate editor in the ASCE Journal of Environmental Engineering.

University of Illinois at Urbana-Champaign

Eberhard Morgenroth has joined the environmental engineering and science program at the University of Illinois at Urbana-Champaign and he holds appointments in the Department of Civil and Environmental Engineering (75%) and the Department of Animal Sciences (25%). Since 1998, Dr. Morgenroth had been an assistant research professor at the Technical University of Denmark in the Department of Environmental Science and Engineering. He received his Ph.D. in 1998 from the Technical University of Munich, Germany. His thesis with Professor Peter Wilderer, *Enhanced Biological Phosphorus Removal in Biofilm Reactors*, received the Ulrich-Finsterwalder Award for an outstanding Ph.D. thesis at the Technical University of Munich. He earned his master of science at the University of California, Davis, in 1994, and his Diploma degree from the Technical University of Hamburg-Harburg, Germany in 1995.

Dr. Morgenroth's research focuses on the influence of dynamic reactor operation on the performance of biological treatment processes. Specific areas of interest include the hydrolysis of particulate organic matter in biofilms, the influence of growth conditions and reactor operation on mass transport in biofilms, detachment processes in biofilm reactors, long term starvation of bacteria, dynamic response of bacteria to rapid changes of environmental conditions. Process application can range from municipal and industrial wastewater treatment, treatment of animal wastes, to biological air treatment. The goal of his research is to develop mechanistically based models, which allow for predictions of biological treatment processes under transient conditions. He is a member of the International Water Association, American Society for Microbiology, Water Environment Federation, and the Abwassertechnische Vereinigung.

University of North Carolina

The Department of Environmental Sciences and Engineering at the University of North Carolina-Chapel Hill is pleased to announce that **Gregory Characklis** has joined the department as an Assistant Professor. Dr. Characklis received his B.S. in Materials Science and Engineering from Johns Hopkins University, and M.S. and Ph.D. degrees in Environmental Science and Engineering from Rice University. From 1997-1999, he was a Fellow with the National Academy of Engineering, where he evaluated policy issues related to both lessening industrial environmental impacts and the use of economic incentives to drive environmental improvement. Since 1999, Dr. Characklis has served as Director of Resource Development and Management for Azurix Corporation in Houston, developing strategies to identify and pursue creative opportunities to solve regional water supply problems. His research interests are in combining technical and economic approaches to solving environmental engineering challenges, particularly in water resource management and pollution prevention.

University of Texas at Austin

The ASCE announced that **Joseph F. Malina, Jr.**, P.E., DEE, the C.W. Cook Professor in Environmental Engineering at the University of Texas at Austin, is a co-recipient of the 2000 Arthur M. Wellington Prize, along with **Michael E. Barrett**, P.E., Research Engineer at the Center for Research in Water Resources, **Randall J. Charbeneau**, P.E., associate Dean for Research, College of Engineering at the University of Texas at Austin, and **Lynton B. Irish, Jr.**, P.E., Consulting Engineer in Shreveport, La. The Wellington Prize is one of four ASCE Society-wide awards that include the Norman and Croes Medals. The award was presented at the ASCE 2000 Annual Convention in Seattle, Wash. in October.

The prize was awarded for the paper, "Use of Regression for Analyzing Highway Storm-Water Loads," Journal of Environmental Engineering, October 1998. This paper was based on research funded by the Texas Department of Transportation under grant number 7-1943, *"Water Quantity and Quality Impacts Assessments of Highway Construction in Austin Texas."* The Arthur M. Wellington Prize recognizes one aspect of multi-year ongoing field-scale research efforts focused on the quantity and quality of highway runoff and the best management practices for control of highway runoff. **Dr. Malina** was Project Director and "father" of a unique rainfall simulator that was developed and used to produce steady-state storm events. **Dr. Barrett** was Project Manager of the overall study project that was funded by the Texas Department of Transportation through the Center for Transportation Research and the Center for Research in Water Resources at The University of Texas at Austin. **Dr. Irish** was a Graduate Research Assistance responsible

for the development of the rainfall simulator and statistical interpretation of the runoff quality and variables affecting the quality. **Dr. Charbeneau** was a co-principal investigator.

The research effort provided data to identify the variables that significantly influence constituent loading from highways (i.e. duration of the rain storm, volume and intensity of runoff per area of drainage area, antecedent dry period, volume of traffic per lane during the dry period and duration of the rain storm, volume and intensity of runoff per area of drainage area during the previous storm event). A computer model was developed that allows the prediction of potential impacts of new highways as well as providing a screening tool to identify those segments of existing highways that may threaten the quality of receiving waters.

The Arthur M. Wellington Prize was instituted in 1921 by the Board of Direction (ASCE) in response to a proposal by the Engineering News-Record, which endowed the award in honor of Arthur M. Wellington, former editor of Engineering News.

Utah State University

Utah State University is pleased to announce that Associate Professor **Randy Martin** and Assistant Professor **Laurie S. McNeill** joined the faculty of the Civil and Environmental Engineering Department / Utah Water Research Laboratory (UWRL) in August 2000.

Dr. Martin completed his Ph.D. in civil engineering at Washington State University under Dr. Hal Westberg. Before joining the faculty at USU, Dr. Martin was an assistant/associate professor for eight years at the New Mexico Institute of Mining and Technology in Socorro, New Mexico. His teaching and research interests include measurement and analysis of the emissions and concentrations of atmospheric trace species, most notably reactive biogenic hydrocarbons, criteria pollutants, and related oxidation products.

Dr. McNeill completed her Ph.D. in civil engineering at Virginia Tech with Dr. Marc Edwards. Laurie also has a M.S. in civil engineering and B.S. in chemical engineering from the University of Colorado at Boulder. Her research interests include removal of arsenic from potable water and corrosion of water distribution system piping.

The UWRL is a stand alone facility of approximately 110,000 square feet that is a research arm of the College of Engineering at USU and works closely with the Department of Civil and Environmental Engineering. With an annual budget of approximately $6 million, the UWRL provides scholarship support for research to graduate students at the M.S. and Ph.D. levels in Environmental, Fluid Mechanics/Hydraulics and Water Resources Engineering. Approximately 50 graduate students are supported by the UWRL and public/private organizations to conduct research leading to advanced degrees in environmental/water engineering.

Washington University

Washington University in St. Louis is pleased to announce the appointment of **Dr. Pratim Biswas** as the Stifel and Quinette Jens Professor of Environmental Engineering and Director of the Environmental Engineering Science Program. Dr. Biswas joined us from the University of Cincinnati where he was Professor in the Environmental Engineering Science Division. He received his doctoral degree from the California Institute of Technology. His expertise is in Aerosol Science and Engineering, Air Quality and Pollution Control, Colloidal Processes, Environmentally Benign Processing and Nanotechnology.

The Environmental Engineering Science Program at Washington University is an integrated, multidisciplinary program that provides a scientific education for individuals interested in focusing on the improvement and management of the quality of the environment. Courses and research encompass areas such as Air Quality and Pollution Control, Aerosol Science and Engineering, Biological Treatment Processes, Contaminant Transport, Drinking Water Treatment, Environmentally Benign Processing, Nanotechnology, Reaction Engineering, Sustainable Technology, Water Quality and Pollution Control. Additional details can be obtained from www.env.wustl.edu.

WEF

Rajat Ghosh, David Dzombak, Richard Luthy and **John Smith** received the prestigious Jack Edward McKee Medal from the Water Environment Federation (WEF) during ceremonies Oct. 17 in Anaheim, Calif., at WEFTEC 2000, the Federation's 73rd annual technical conference and exposition.

The four men were recognized for their article, "In-situ Treatment of Cyanide-Contaminated Groundwater by Iron Cyanide Precipitation," published in the September/October 1999 issue of *Water Environment Research*. Their paper addresses a technique for remediation of a widely found groundwater contaminant utilizing an innovative technology, and develops process fundamentals for removing cyanide from groundwater using an innovative chemical process. The McKee award is for a significant contribution to groundwater protection, restoration, or sustainable use as described in a WEF publication.

Ghosh is an environmental engineer with ThermoRetec Corporation in Monroeville, Pa.; Dzombak is employed by the civil and environmental engineering department at Carnegie Mellon University in Pittsburgh; Luthy is a member of Stanford University's environmental engineering and science department; and Smith is manager of environmental science and technology development at Alcoa, Inc. in Alcoa City, Pa.

"Federation members throughout the world work in different ways to preserve and enhance the global water environment," said WEF Executive Director **Quincalee Brown**. "This award helps recognize how these four professionals have distinguished themselves in this noble effort."

University of New Hampshire

Dear AEESP Colleagues:

The Civil Engineering Department at the University of New Hampshire has a number of graduate research assistantships with the following centers (with points of contact): Water Treatment Technology Assistance Center (Dr. Robin Collins, 603-862-1407, robin.collins@unh.edu); Electrotechnologies Research Program (Dr. Jim Malley, 603-862-1449, jim.malley@unh.edu); Bedrock Bioremediation Center (Dr. Nancy Kinner, 603-862-1422, nek@christa.unh.edu); Contaminated Sediment Research Center (Dr. Kevin Gardner, 603-862-4334, kevin.gardner@rmrc.unh.edu); and the Recycled Materials Resource Center (Dr. Taylor Eighmy, 603-862-1065, t.eighmy@rmrc.unh.edu).

Some assistantships are available in January; others are available for next summer and fall. Graduate research assistantship stipends are $18,000 (academic year plus summer) and tuition is covered by the assistanship. For more information, please check the following web sites:

http://www.unh.edu/erg/
http://www.unh.edu/wttac/
http://www.unh.edu/erg/BEDROCK.htm
http://www.unh.edu/erg/CSRC/CSRC.htm
http://www.rmrc.unh.edu/

Regards,
T. Taylor Eighmy, Ph.D.
Research Professor of Civil Engineering
Director, Environmental Research Group
University of New Hampshire

AEESP Members,

Does AEESP have your correct address?

Send address changes to:

Joanne Fetzner
AEESP Business Office
2208 Harrington Court
Champaign, IL 61821

e-mail: jfetzner@uiuc.edu
phone: 217-398-6969
fax: 217-355-9232

Arizona State University

THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING at ARIZONA STATE UNIVERSITY (ASU) invites applications for a tenure-track faculty position in the area of Environmental Engineering at the rank of Assistant or Associate Professor. At the time of appointment the candidate must have an earned doctorate in Environmental Engineering or a related field with emphasis on the fundamentals of water quality control processes. The candidate must demonstrate experience, appropriate to rank, to teach courses related to environmental engineering. Desired qualifications include knowledge of experimental or numerical analytical techniques to evaluate treatment processes using state-of-the-art analytical techniques with a focus on emerging contaminants. The candidate will be expected to complement existing expertise in the Department of Civil and Environmental Engineering at Arizona State University and to participate in multidisciplinary efforts of the university. Duties include development of externally funded research activity including graduate student supervision, graduate and undergraduate teaching, and service.

Salary will be commensurate with experience and qualifications. Arizona State University has a strong commitment to environmental engineering research activities with many opportunities for multi-disciplinary activities. More information may be obtained at www.eas.asu.edu/~civil or contact Peter.Fox@asu.edu. Applicants must submit a statement of teaching and research interests, resume, and names, addresses and phone/fax/email of three references. Send application materials to: Dr. Peter Fox, Chair, Faculty Search Committee, Department of Civil and Environmental Engineering, Box 5306, Arizona State University, Tempe, AZ 85287-5306. The application deadline is December 15, 2000 or the end of each month thereafter until the position is filled. ASU is an equal opportunity, affirmative action employer.

University of Buffalo

FACULTY POSITION ANNOUNCEMENT, ENVIRONMENTAL ENGINEERING AND WATER RESOURCES, DEPARTMENT OF CIVIL, STRUCTURAL, AND ENVIRONMENTAL ENGINEERING. The Department of Civil, Structural and Environmental Engineering at the University at Buffalo invites applications for a tenure-track faculty position at any rank in its environmental engineering and water resources group beginning September 1, 2001. At the time of appointment, the candidate must have an earned doctorate in civil or environmental engineering or a related field. Applicants with expertise in all areas of environmental engineering and water resources are welcome, but we are particularly interested in persons who can add to and bring distinction to current strengths and research directions of the department, including large-scale multimedia modeling, hydrology of large lakes watersheds, simulation and control, fluid mechanics, sediment and associated contaminant transport, information technology, environmental chemistry, and environmental molecular biology. The department recently initiated an undergraduate degree program in environmental engineering and candidates will be expected to contribute to both undergraduate and graduate teaching, as well as participate in multi-disciplinary research efforts of the department and the university. Specific duties will include development of an externally funded research program, graduate and undergraduate student advisement and teaching, and service activities.

The Department of Civil, Structural, and Environmental Engineering currently has 23 full-time faculty members, 165 graduate students and 250 undergraduates. The department is host to three major research centers: the Great Lakes Program, the Center for Integrated Waste Management, and the Multidisciplinary Center for Earthquake Engineering Research. In addition, departmental faculty have worked closely with the Center for Computational Research, National Center for Geographic Information Analysis, and the University's Environment and Society Institute. Successful candidates will be encouraged to work collaboratively in one or more of these centers.

Applicants should submit a resume, a statement of teaching and research interests, and contact information for three references to Dr. Michael Constantinou, Department of Civil, Structural and Environmental Engineering, State University of New York at Buffalo, Buffalo, NY 14260-4300. Further information on the position may be obtained from Dr. Joseph Atkinson at atkinson@eng.buffalo.edu, or (716) 645-2088. The program web site is at http://wings.buffalo.edu/ees/. Qualified women and minority candidates are encouraged to apply. Application deadline is February 1, 2001, or until the position is filled. The University at Buffalo is an Equal Opportunity/Affirmative Action Employer.

Colorado State University

THE CIVIL ENGINEERING DEPARTMENT of COLORADO STATE UNIVERSITY invites applications for a tenure-track faculty position at the assistant or associate professor level in the area of environmental engineering. Starting date is Fall Semester, 2001. Candidates may work in any application area related to protection or restoration of water quality but an emphasis on physical, chemical and/or biological processes is

desired. Requirements are a B.S. in Engineering and a Ph.D. in Civil Engineering or a closely related field. A proven record of funded research and peer-reviewed publications will be considered a distinct advantage. Candidates must be registered as a Professional Engineer or have the potential to become registered. Candidates must be dedicated to excellence in teaching and professional service. Professional consulting or industrial/governmental experience is desirable since the successful candidate will be expected to work closely with industry/government in the rapidly developing environmental engineering field with an active, externally funded research program. The position is intended to strengthen multi-disciplinary research activities and collaborate with other environmental faculty within the University. The appointment will be made at a level commensurate with the candidate's experience.

For full consideration, please submit an application by January 15, 2001 including a complete curriculum vitae, a one-page statement of teaching and research interests, and names and contact information of three references to: Environmental Engineering Search Committee Chair, Dr. Chester C. Watson, Department of Civil Engineering, Colorado State University, Fort Collins, CO, 80523-1372. Fax: (970) 491-7727. Further information about the department and the position can be found at http://www.engr.colostate.edu/depts/ce. CSU is an EEO/AA employer. Women and minorities are encouraged to apply.

Drexel University

FACULTY POSITION IN ENVIRONMENTAL ENGINEERING. Applications are invited for a faculty position in the School of Environmental Science, Engineering and Policy at Drexel University. Applicants for the position should have an earned doctorate, and have interests in and potential for developing a career balancing graduate and undergraduate teaching, research and service. We particularly seek persons at the assistant professor level, although applicants for all ranks will be considered. The position is available in September 2001.

Applicants for the position should have a doctoral degree in environmental engineering, and should either have or be eligible to obtain professional engineering licensure. Persons having other engineering doctoral degrees and extensive environmental engineering experience will also be considered. Research and teaching interests in design and operating principles of biological aspects of environmental engineering are sought (e.g., biological water/wastewater treatment, bioremediation).

Preference will be given to candidates whose interests link with those of existing faculty, yet who show extensions beyond our current base of activities.

The position is housed in the School of Environmental Science, Engineering and Policy (http://www.drexel.edu/sesep) which has 12 full-time faculty and 80 graduate students. A new undergraduate program in environmental engineering complements an existing undergraduate major in environmental science and an educational program in environmental policy.

Application materials should be submitted by mail, e-mail or fax to: Dr. Claire Welty, School of Environmental Science, Engineering and Policy, 606 Nesbitt Hall, Drexel University, 3141 Chestnut Street, Philadelphia, PA 19104; e-mail: weltyc@drexel.edu; Fax: 215-895-2267.

Applications should include a statement of teaching interest and a statement of research interest, in addition to a curriculum vitae. In addition, applicants should arrange for three letters of reference to be sent to Professor Welty. Review of applications will begin November 15, 2000. Applications will be accepted until the position is filled. Drexel University is an affirmative action equal opportunity employer who encourages applications from qualified women and minorities.

Duke University

FACULTY POSITION ANNOUNCEMENT, DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING, DUKE UNIVERSITY. The Department of Civil and Environmental Engineering at Duke University invites applications for tenure-track positions at all ranks in the broad areas of dynamics of materials and structures, atmospheric hydrology, and environmental engineering and hazardous waste remediation. Applicants must hold B.S. and Ph.D. degrees in civil engineering or a related field. Within the discipline of dynamics of materials and structures, candidates with demonstrated expertise in one or more of the following areas are particularly encouraged to apply: computational and experimental methods in nonlinear dynamics, elastic waves, viscoelasticity, non-Newtonian fluid mechanics, poro-elasticity, rheology, micro-mechanics and multiphysics modeling, constitutive modeling, system identification, random vibration, earthquake engineering, aeroelasticity, impact and shock dynamics, damping, isolation, vibration control, soil-structure interaction, smart structures, and offshore structures. Atmospheric hydrology candidates with demonstrated expertise in one or more of the following areas are particularly encouraged to apply: atmospheric contaminant transport modeling, hydroclimatology, coupling atmospheric-landsurface processes, atmospheric interaction with the biosphere, general circulation of the atmosphere and weather systems, solar and terrestrial radiation, turbulence and diffusion, and climate variations.

The successful candidates must have a strong commitment to teaching and mentoring undergraduate and graduate students, and developing a strong sponsored research program. Applications received by January 15, 2001 will receive full consideration. Applicants are encouraged to submit their curriculum vitae, a personal statement outlining their research and teaching interests, and names, addresses, and telephone numbers of references to: Chair, Search Committee, Department of Civil and Environmental Engineering, Duke Univer-

sity, Box 90287, Durham, NC 27708-0287.

Duke University is an Equal Opportunity/Affirmative Action Employer.

Johns Hopkins University

POSTDOCTORAL OPPORTUNITIES in ENVIRONMENTAL/SURFACE CHEMISTRY at JOHNS HOPKINS UNIVERSITY. Two postdoctoral positions are available to investigate mechanisms of organohalide reactions with iron particles. Applicants must possess a Ph.D. in environmental chemistry, environmental engineering, chemistry, chemical engineering, or a related environmental field. Experience with column reactors, GC/FID analysis, vapor/liquid-solid interactions, electrochemistry, or surface characterization techniques such as Auger Electron Spectroscopy, XPS, or surface IR techniques are desirable. Successful candidates will be expected to work jointly between researchers in Environmental Engineering (Roberts) and Chemistry (Fairbrother). Additional information is available at: http://www.jhu.edu/~chem/environmental/opportunities.html. Resumes and names of 3 references should be sent to either: Professor A. Lynn Roberts (Department of Geography and Environmental Engineering) or Professor Howard Fairbrother (Department of Chemistry), both at 3400 North Charles Street, Baltimore, MD 21218. Women and minorities are strongly encouraged to apply. JHU is an EEO/AA employer.

University of Illinois at Urbana-Champaign

POST-DOCTORAL POSITION IN MOLECULAR MICROBIAL ECOLOGY at the UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN. A post-doctoral position is available to develop and validate solution-based hybridization techniques for microbial population quantification. The project will focus on the optimization of molecular beacon hybridization in microfluidic systems for the direct detection and quantification of specific microorganisms in environmental samples. Candidates should have a Ph.D. in environmental microbiology, microbial ecology, or related field with extensive experience with nucleic acid hybridizations, sequence analyses, and related molecular microbiological techniques. Experience with solution-based hybridization is beneficial but is not required.

The post-doctoral associate will participate in a collaborative project with Dr. Lut Raskin, Department of Civil and Environmental Engineering, and Drs. Michal Balberg and Steve Boppart, Department of Electrical and Computer Engineering at the University of Illinois at Urbana-Champaign. Our programs offer dynamic and productive interdisciplinary research groups, excellent laboratory facilities, and support facilities (University of Illinois Biotechnology Center and Beckman Institute). Please send an application letter; a CV; the names, addresses, telephone, fax, and e-mail addresses of three references; and reprints of recent publications to Professor Raskin, University of Illinois at Urbana-Champaign, Department of Civil and Environmental Engineering, 205 N. Mathews Av., Urbana, IL 61801; e-mail: lraskin@uiuc.edu; telephone: (217) 344-6964; fax: (217) 333-6968 or -9464. Review of applications will begin December 21, 2000, but applications will be considered until the position is filled with a suitable candidate.

University of Iowa

POST-DOCTORAL RESEARCH POSITION. The Program in Environmental Engineering and Science at the University of Iowa invites applicants for a post-doctoral research associate position. The selected applicant will conduct research investigating factors and processes influencing the formation of nitrosodimethylamine (NDMA) during treatment of water and wastewater, as well as its fate in groundwater and surface water. Applicants should have a Ph.D. in Environmental Engineering and/or Science or related field with a strong background and interest in experimental work in environmental chemistry, analytical methods, and physical-chemical treatment processes. The position will be available February 2001. Applications will be taken until the position is filled. Send a CV, a list of references, and a letter describing qualifications by regular mail to: Professor Richard L. Valentine, Department of Civil and Environmental Engineering, College of Engineering, Seamans Center, University of Iowa, Iowa City, Iowa 52242. Office Phone: (319) 335-5653, Fax: (319) 335-5660, E-mail: richard-valentine@uiowa.edu. The University of Iowa is an equal opportunity/affirmative action employer.

University of Michigan

CHAIRMAN, DEPT. OF CIVIL AND ENVIRONMENTAL ENGINEERING, UNIVERSITY OF MICHIGAN. The Department of Civil and Environmental Engineering at the University of Michigan seeks applicants for the position of Department Chair. The Department currently has 25 faculty members with 180 undergraduate and 140 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. Sponsored research expenditures for FY 1999 exceeded $7.3 million.

The qualified candidate should possess outstanding leadership and administrative capabilities, an established record in research and teaching, and an earned doctorate in the area of civil and environmental engineering (or a closely related field). The candidate should be innovative with a thorough understanding of the present status of the profession and a clear vision of the future needs of civil and environmental engineer-

ing. The candidate should have strong abilities in promoting sponsored research programs, leading development activities, 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.

Salary will be commensurate with qualifications. Applicants should provide a detailed resume of experience and qualifications, and be prepared to provide at least three references upon request. In addition, each application 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 September 2001. The screening of candidates will begin immediately and will continue until the position is filled.

Inquiries, applications or nominations should be addressed to Chairman, CEE Chair Search Committee, Department of Civil and Environmental Engineering, 2340 G.G. Brown Building, University of Michigan, Ann Arbor, MI 48109-2125. The University of Michigan is an Equal Opportunity/Affirmative Action Employer and especially encourages women and underrepresented minorities to apply.

Michigan State University

FACULTY POSITION, CIVIL AND ENVIRONMENTAL ENGINEERING. Michigan State University Department of Civil and Environmental Engineering (CEE) invites applications for a tenure-track position in the environmental engineering group focused on hydraulics, hydrology or environmental fluid mechanics. This is a continuing academic-year position (9 months per annum). A Ph.D. in Civil/Environmental Engineering, or a closely related discipline, is required. Consideration for appointment at a level above Assistant Professor require a superior record of research publication and funding. Women and minorities are strongly encouraged to apply.

The successful candidate will be qualified to teach undergraduate and graduate courses and conduct research that complements the current environmental engineering focus on remediation, chemistry and microbiology. A demonstrated ability to work in a collaborative environment on projects that are simultaneously driven by both basic science and application is highly desirable. Of particular interest are those with strong skills in the mathematical modeling of environmental systems. Opportunities are available to collaborate with active research groups across campus in environmental chemistry and microbiology, hydrogeology and computational fluid mechanics.

Information about the CEE department is available at http://www.egr.msu.edu/cee, while the MSU environmental science and engineering focus is outlined at http://www.egr.msu.edu/environment.

The position will be available August 16, 2001. Applications should be received by March 15, 2001, when evaluation will begin. At the discretion of the faculty, late applications may be considered if finalists have not yet been selected.

Please submit a letter describing research and teaching interests, a detailed résumé, graduate transcripts, and the names and addresses of three or more references to Chairperson, Department of Civil and Environmental Engineering, Michigan State University, East Lansing, MI 48824-1226. Please reference academic position number ENG 130 in your letter. Applicants who are not U.S. citizens or permanent residents must state their visa type and status. Michigan State University is an Affirmative Action/Equal Opportunity Employer. Applicants with disabilities have the right to request and receive reasonable accommodation.

Michigan Tech

WATER RESOURCES ENGINEERING. Michigan Technological University invites applications for a tenure-track faculty position in the Department of Civil and Environmental Engineering beginning August 2001. The position will be filled at the rank of Assistant or Associate Professor depending on the applicant's qualifications and experience. Particular areas of interest are watershed management, sediment transport, and hydrologic applications of geographic information systems and remote sensing. The candidate should demonstrate a strong commitment to excellence in teaching, with ability to teach courses in hydraulics/fluid mechanics, open channel flow, hydrology, and water resources design. A doctoral degree in civil or environmental engineering or closely related field is required for employment. Registration or the ability to become registered as a Professional Engineer is highly desirable.

The Civil and Environmental Engineering Department at Michigan Tech includes 26 faculty, 26 professional staff, over 80 graduate students, and 680 undergraduate majors. Research funding exceeds $4.0 million per year, with major research efforts in environmental and transportation engineering. The department is housed in the new $44 million Dow Environmental Science and Engineering Building, which overlooks Portage Lake, and Dillman Hall. Michigan Tech has a very robust program in water quality engineering and the candidate will also have the opportunity to interact with the Remote Sensing and Ecosystem Science Institute (RSI). RSI comprises more than 35 faculty members from seven departments and currently holds approximately $10 million of external research funding.

Michigan Tech is located in Houghton, Michigan on the south shore of Lake Superior. This rural area is known for natural beauty, pleasant summers, heavy snow fall, and abundant all-season outdoor activities. In addition, the university maintains its own downhill and cross-country ski facilities. There

are also numerous cultural activities available on campus at a new 1,100-seat Fine Arts Theatre and off campus at the historic Calumet Theatre. To apply, please send a resume, a statement of your teaching and research interests, and names of three references to Dr. James R. Mihelcic (Search Committee Chair), Department of Civil and Environmental Engineering, Michigan Technological University, 1400 Townsend Drive, Houghton, MI 49931. Applications will be reviewed as they are received and will be accepted until the position is filled. Women and under-represented groups are especially encouraged to apply. Michigan Technological University is an equal educational institution/equal opportunity employer.

Mississippi State University

MISSISSIPPI STATE UNIVERSITY, DEPARTMENT OF CIVIL ENGINEERING, ENVIRONMENTAL AND WATER RESOURCE ENGINEERING POSITION. Applications are invited for a tenure-track faculty position effective Spring 2001. While it is anticipated the appointment will be at the assistant or associate professor level, outstanding candidates will be considered for the rank of professor and for the endowed Kelly Gene Cook Chair in Civil Engineering. Candidates with a specialization in surface water hydrodynamics, water quality management, and the fate and transport of environmental constituents are sought. A background in computational field simulation is desired with particular interest in applications and development and enhancement of environmental modeling software. A Ph.D. in water resources, environmental engineering, or related fields is required. The successful candidate will be expected to conduct research in the area of surface water quality modeling with applications in the areas of computational mechanics, chemical and biological processes, estuarine hydrodynamics, and watershed management. The successful candidate is expected to help sustain and expand a vigorous, externally-funded research program in the area of surface water modeling related to TMDL assessment and other environmental and water resource areas, as well as achieve excellence in educational and scholarly activities. The successful candidate is expected to be a licensed professional engineer or able to become licensed in Mississippi within three years. Applicant review will begin November 1, 2000, and continue until the position is filled. Information about the department's faculty, students, programs, and research activities is available at http://www.civil.msstate.edu. To be considered, applicants should submit a letter of interest summarizing their teaching and research interests, a current resume and a list of at least three references attached. Submissions should be sent to Dr. Dennis D. Truax, Chair, Environmental Faculty Search Committee, Department of Civil Engineering, Box 9546, 204 McCain Engineering Building, Mississippi State, MS 39762-9546. Mississippi State University is an AA/EOE.

University of Missouri-Columbia

UNIVERSITY OF MISSOURI-COLUMBIA: THE DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING invites applications for a tenure-track faculty position in Environmental Engineering. Candidates should have a strong interest in teaching and research in the broad area of environmental engineering. The research specialization may include but is not limited to one or more of the following: drinking water and wastewater treatment, solid waste engineering, contaminant transport and remediation, geo-environmental engineering, waste minimization, physical/chemical/biological treatment operations, and environmental risk management. Candidates should be able to contribute to and participate in the activities of the Water Resources Research Center located in the department. The successful candidate will be expected to develop a well-funded research program, to publish scholarly work in appropriate journals, to actively guide students in research, and to demonstrate excellence in education. Candidates must have earned a Ph.D. in civil engineering or a closely related field by August 1, 2001, and those with a bachelor's degree in civil engineering will be given a strong preference. Preference will also be given to candidates with professional registration or the ability to obtain it. It is anticipated that the position will be filled at the Assistant Professor level; however, outstanding candidates at all ranks will be considered. Review of applications will begin January 1, 2001 and will continue until the position is filled. Interested candidates should send a letter of application, a current resume, a statement of career objectives, undergraduate and graduate transcripts, and a list of at least three references to: Dr. Sam A. Kiger, Chairman, Department of Civil & Environmental Engineering, University of Missouri-Columbia, Columbia, MO 65211-2200. Further information about the department is available at http://www.ecn.missouri.edu/academic/civil.

The University of Missouri-Columbia (UMC) is a member of the American Association of Universities and is a Carnegie Research I institution. UMC, as an equal opportunity and affirmative action institution, encourages applications from qualified women and ethnic minorities, and UMC complies with the guidelines of the Americans with Disabilities Act of 1990.

University of Missouri-Rolla

FACULTY POSITION IN ENVIRONMENTAL ENGINEERING, DEPARTMENT OF CIVIL ENGINEERING. The Department of Civil Engineering at the University of Missouri-Rolla invites applicants for a tenure-track position in the area of Environmental Engineering. Research interests in air pollution are especially desired, although other areas of environmental engineering will also be considered. This position is part of a major environmental engineering initiative within the Civil Engineering Department and the University of Missouri-Rolla. It is anticipated that the position will be filled at the assistant or asso-

ciate professor level with salary commensurate with qualifications and experience. The successful candidate must demonstrate a strong commitment to teaching environmental engineering courses at both the graduate and undergraduate levels. Superior communications skills, leadership capabilities, and the ability to motivate and inspire undergraduate and graduate students are also required. The successful candidate is also expected to develop a strong, externally-funded research program and direct research activities at the masters and doctoral levels. The successful candidate must have an ABET-accredited Bachelor of Science degree in engineering (or equivalent) and an earned doctorate with a program of study that emphasizes environmental engineering. Professional registration, or the ability to obtain same, is highly desirable.

The University of Missouri-Rolla is the technological campus of the University of Missouri system. Established in 1870 as the Missouri School of Mines and Metallurgy, the campus is located in the heart of the Missouri Ozarks, 100 miles southwest of St. Louis. Over 70 percent of the student body is majoring in science and engineering. The campus supports the Environmental Research Center, Cloud and Aerosol Science Lab, and the Center for Environmental Science and Technology. The Department of Civil Engineering has 26 faculty, 277 undergraduates and 49 resident graduate students. This position is part of a major environmental engineering initiative within the Civil Engineering Department and the University of Missouri-Rolla.

Applications received by December 1, 2000 will receive first consideration. It is anticipated that the position will be filled by August, 2001. Additional information about UMR, the Department and its environmental engineering program may be found at www.umr.edu/~civil or by contacting Ms. Kim Johnson (573-341-6908). Applications should include a statement of teaching and research interests and goals, a complete curriculum vitae, and names of three references. Applications should be submitted to: Human Resource Services, Re: Position Number R53238, 1202 N. Bishop, 1870 Miner Circle, University of Missouri-Rolla, Rolla, MO 65409. The University of Missouri-Rolla is an affirmative action/equal opportunity employer. Females, minorities and persons with disabilities are encouraged to apply.

Penn State Capital College

DIRECTOR, SCHOOL OF SCIENCE, ENGINEERING AND TECHNOLOGY. Penn State Capital College seeks an academic administrative leader for its School of Science, Engineering and Technology. The preferred candidate will possess: an earned doctorate in, or closely related to, a discipline represented within the School; record of excellence in teaching, research, and service; significant academic experience; proven management skills; demonstrated leadership in the enhancement of undergraduate and graduate education; commitment to cultural diversity; skills for developing collaborative relationships with business and industry; record of acquiring external funding; educational and/or experiential background to effectively represent various disciplines within the School; eligibility for appointment as senior faculty. Preferred starting date is January 1, 2001.

The Capital College is comprised of two campuses--Penn State Harrisburg and Penn State Schuylkill. The School of Science, Engineering and Technology offers Bachelor of Science programs in Computer Science, Mathematical Science, Electrical Engineering, Electrical Engineering Technology, Environmental Engineering, Mechanical Engineering Technology, Structural Design and Construction Engineering Technology and Master's programs in Computer Science, Engineering Science, Electrical Engineering and Environmental Pollution Control at the Harrisburg campus. The Schuylkill campus offers associate degree programs in Information Sciences and Technology and Electrical Engineering Technology as well as the first two years of Engineering and Science programs. The School has 56 full-time faculty and over 530 full/part-time students, and its engineering technology programs are fully accredited.

The College is easily accessible from Philadelphia, Baltimore, Washington, D.C. and New York. Penn State Harrisburg is located in Middletown, near the state capital of Harrisburg, and Penn State Schuylkill is located in Schuylkill Haven, approximately 55 miles northeast of Middletown. The College's enrollment of more than 4,500 (1,000 at Schuylkill and 3,500 at Harrisburg) is a mixture of traditional and nontraditional, full-time and part-time, resident and commuter students. The College offers baccalaureate degrees in 30 academic majors, 17 master's degree programs, and two doctoral programs.

Please submit a letter of application, resume, and the names, addresses, and phone numbers of five references to: Chair, Director of School of SET Search Committee, c/o Mrs. Dorothy J. Guy, Manager of Human Resources, Penn State Capital College, Box CHE, 777 West Harrisburg Pike, Middletown, PA 17057-4898. Review of applications will begin immediately and continue until the position is filled. Penn State is committed to affirmative action, equal opportunity, and the diversity of its workforce.

Tulane University

CHAIR, DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING. The Department of Civil and Environmental Engineering, Tulane University, invites applications and nominations for the position of department chair. The position will be available as early as March 2001 and will remain open until filled. Screening of applications will begin on December 1, 2000.

The challenge for the Chair will be to (1) lead the faculty to the articulated vision of the department, (2) serve as a role-model in faculty development, teaching and research, and (3) establish partnerships with industry and professional, governmental and service communities of New Orleans. In addition to

an earned doctorate in civil or environmental engineering, the successful candidate is expected to either have, or obtain within a reasonable time, registration as a professional engineer.

The department tenure-track faculty will grow from eight to nine with this position. We expect to grow in faculty strength over the next six years. In fulfilling our mission of research and undergraduate teaching excellence we will blend our civil and environmental engineering strengths toward education and research into urban infrastructure systems.

Tulane faculty are privileged to work amidst the unique charms of New Orleans. The ambiance of the city, the friendliness of its people, the unbeatable cuisine, the aura of the Mississippi River and the unique geography of the region combine to make Tulane University an ideal institution in which to prosper, both personally and professionally. The University is comprised of Tulane Medical Center, School of Public Health and Tropical Medicine, Primate Center, School of Liberal Arts and Sciences, School of Architecture, School of Business, School of Law, and a School of Engineering with 56 faculty.

Applicants should submit a C.V., list of three references and a letter containing a statement of professional goals, research interests and commitment to outstanding teaching. Please forward this information to: Chair, Search Committee**,** Department of Civil and Environmental Engineering, Civil Engineering Building, Tulane University, New Orleans, Louisiana 70118.

Tulane University is an Equal Opportunity, Affirmative Action Employer. We encourage applications from women and ethnic minorities.

U.S. Air Force Academy

VISITING PROFESSOR, THE UNITED STATES AIR FORCE ACADEMY, VISITING FACULTY PROGRAM. The United States Air Force Academy, located just north of Colorado Springs, Colorado, is an undergraduate institution which awards the Bachelor of Science degree as part of its mission to inspire and develop outstanding young men and women to become Air Force officers with knowledge, character, and discipline. Applications are invited from candidates who can contribute to this mission as visiting faculty members. The purpose of the Visiting Faculty Program is to supplement the Air Force Academy faculty by providing visiting civilian educators from institutions of higher education. Visiting faculty positions exist for the 2001-2002 academic year in the following disciplines: aeronautics, biology, behavioral sciences & leadership, chemistry, civil and environmental engineering, electrical engineering, engineering mechanics, English, foreign languages, history and philosophy. Visiting faculty members will be temporarily detailed to the Federal government but will remain employees of their institution of higher education. They will continue to receive their salary from their home institution. The period of assignment will normally be for 10-1/2 months (approximately July 10th through May 31st). Tour lengths exceeding one year are possible.

QUALIFICATIONS: Applicants should possess a minimum of a master's degree. Although a doctoral degree is not required, preference will be given to individuals possessing a terminal degree in their discipline.

DUTIES AND RESPONSIBILITIES: Duties will be determined by the Department Chair and the visiting faculty member. Major components of this program typically include:

* Assisting in the development of and conducting courses for cadets and performing course-related research.
* Reviewing content of departmental courses in the visiting faculty member's area of specialty.
* Serving as a consultant to faculty members and cadets engaged in faculty-sponsored research projects.
* Conducting original research on matters of mutual interest to both the visiting faculty member and the Air Force leading to possible publications in professional journals.
* Serving as advisor to the Department Chair, assisting in curriculum development, and participating on faculty committees in the visiting faculty member's area of expertise.
* Reviewing Academy library holdings and recommending additions and deletions.

For more information, contact Dr. John Sherfesee, Visiting Faculty Program Director, 2354 Fairchild Drive, Suite 6F4, United States Air Force Academy, CO 80840-6200; (719) 333-2558. Internet Address: john.sherfesee@usafa.af.mil.

Faculty members from Historically Black Colleges and Universities and Minority Institutions (HBCU/MI) are encouraged to apply. The Federal Government is an equal opportunity employer.

The available visiting faculty position for academic year 2001-2002: The Department of Civil and Environmental Engineering: The focus of this visiting faculty position is on teaching. Preference will be given to candidates with demonstrated excellence in teaching undergraduate civil or environmental engineering and who possess an established record of innovation and research in the field. Professional registration and experience with industry are highly desirable. Consideration will be given to registered architects with construction/engineering experience in industry or government and/or teaching experience.

University of Waterloo

POST-DOCTORAL RESEARCH POSITION. Applications are invited for a post-doctoral research associate position in the Water Resources and Environment Group of the Department of Civil Engineering at the University of Waterloo. The selected applicant will conduct research into treatment processes, water quality conditions and operational parameters that influence the formation of N-nitrosodimethylamine (NDMA), primarily

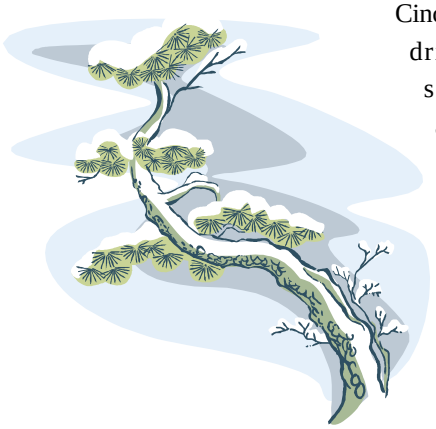
during the treatment of drinking water and wastewater. Applicants should have a Ph.D. in Environmental Engineering and/or Science (or a related field) with a strong background and interest in experimental work in physical-chemical treatment processes and/or environmental chemistry. This one to two year appointment will be available in February 2001. Applications will be taken until the position is filled. Send a CV, a list of references and a letter describing qualifications, or a request for more information, to: Susan A. Andrews, Ph.D., Assistant Professor, Department of Civil Engineering, University of Waterloo, Waterloo, ON N2L 3G1 Canada; Phone: 519-888-4567 ext. 3344; FAX: 519-746-7499; E-mail: saandrews@uwaterloo.ca; http://www.civil.uwaterloo.ca/saandrews/.

Publications

Educational videotapes on drinking water made available through AEESP

by James M. Symons

When I was at the University of Houston, I developed an "after dinner" talk for the general public entitled, "Tap Water--Terror or Treasure?" At one of my presentations, the talk was professionally videotaped by a public access television station in Houston. The running time is 48 minutes. Based on the AWWA book, Plain Talk About Drinking Water, in the video I answer many of the common questions about drinking water quality. Although prepared for a Houston audience, most of the material is generic, although providing information about a local situation would always be helpful. More information on the video is available at the AEESP web site, www.aeesp.org.



In 1974, I was working in Cincinnati at the USEPA drinking water research laboratory and, thus, had the opportunity of being an eyewitness at the start of the DBP issue, when trihalomethanes were first discovered. In the mid-90s, to preserve that history, I made a videotape entitled, "1974 Revisited--A History of the Disinfection By-Product Issue." The running time is 48 minutes. The material in this tape allows the viewer to understand the background leading up to the current times, with respect to DBPs. The current status of the subject is contained in the AWWA book, Formation and Control of Disinfection By-Products in Drinking Water, edited by Dr. Philip C. Singer. More information on the video tape is available at the AEESP web site, www.aeesp.org.

In cleaning out, I offered my inventory of tapes to the AEESP membership through its e-mail address list. In the less than 24 hours that the window of opportunity was open to request copies of the two video tapes, I received 51 requests for the tap water tape and 30 requests for the DBP tape. These requests far outstripped my available inventory.

Because of the interest shown, AEESP has agreed to obtain the master tapes (generously donated by the University of Houston) and make copies available to the membership. Those interested in either tape should contact Joanne Fetzner at the AEESP Business Office, 2208 Harrington Court, Champaign, IL 61821; phone (217) 398-6969; e-mail jfetzner@uiuc.edu.

I am gratified at the members' interest and my thanks to AEESP for making these resources available to the profession.

Environmental Biotechnology: Principles and Applications

Bruce E. Rittmann and Perry L. McCarty, McGraw-Hill, New York, 2001

In H. G. Wells' classic story *The War of the Worlds*, written in 1898, we humans are about to become domesticated farm animals to feed the Martians, new masters of the earth. As the Martians are herding up all the humans, two guys hiding in the sewers debate about whether it would not be too bad to be taken care of like a farm animal and periodically harvested. Our hero, of course, holds out for human dignity. But before they both become hamburger meat for the Martians, the world is saved by an unlikely ally. The Martians have not counted on the presence of microorganisms, and lacking immunity against the pathogens, succumb to the attack by our little friends.

When *The War of the Worlds* was published, the "germ theory" was just becoming widely accepted, and microbes were popularly thought to be harmful. Look at what they did to the Martians! Most people did not understand that some microorganisms could also be beneficial. Of course, beer had been made for many centuries, but the beer-making process was thought to be a *chemical* reaction. Similarly the pollution of rivers was thought of as a *chemical* problem and therefore treatment systems all relied on chemical principles. The recognition that minute creatures actually were doing the work of cleansing our aquatic environment was slow in coming and even slower in being applied to wastewater treatment. How this paradigm shift occurred is a fascinating story that changed forever the nature of environmental engineering.

A great deal of credit for understanding the nature of biological decay and hence waste treatment goes to William Joseph Dibdin (1850-1925). Dibdin, a self-educated son of a portrait painter, began work with the Metropolitan Board of London in 1877, rising to chief chemist in 1882, but with the responsibilities of the chief engineer. In seeking a solution to the wastewater disposal problem at the Barking Creek and Crossness outfalls, he initiated a series of experiments using various flocculating chemicals such as alum, lime, and ferric chloride to precipitate the solids before discharging to the river. This was not new, of course, but Dibdin discovered that using only a little alum and lime was just as effective as using a lot, a conclusion that appealed to the stingy Metropolitan Board.

Dibdin recognized that the precipitation process did not remove the demand for oxygen and he became convinced that it was necessary to maintain positive oxygen levels in the water in order to prevent odors. Dibdin decided to add permanganate of soda (sodium permanganate) to the water in order to replenish the oxygen levels. Because Dibdin's recommendations were considerably less expensive than the alternatives, the Board went along with his scheme.

Dibdin's plan was adopted, and in 1885 construction of the sewage treatment works at the Barking outfall commenced. Given the level of misunderstanding at the time, there were a great many who doubted that Dibdin's scheme would work, and he had to continually defend his project. He continued to argue that the addition of the permanganate of soda was necessary in order to keep the odor down, and he began to explain this by suggesting that it was necessary to keep the aerobic microorganisms healthy. Christopher Hamlin, a University of Notre Dame historian who has written widely on Victorian sanitation, believes that this was a rationalization on Dibdin's part and that he did not yet have an insight into biological treatment. The more Dibdin was challenged by his detractors, however, the more he apparently became an advocate of beneficial aerobic microbiological activity in the water, since this was his one truly unique contribution that could not be refuted.

But Dibdin was not totally successful in convincing the Board that these ideas were right. Many scientists argued that odor control could only be achieved by killing the microorganisms, still believing in the evils of the microbial world. These scientists managed in 1887 to wrest control of the treatment works from Dibdin and initiated a summer deodorization control suggested by a college professor that involved antiseptic treatment with sulfuric acid and chloride of lime. This process failed and Dibdin was vindicated.

And now, 113 years later, we have a couple of college professors who not only agree with Dibdin, but have written an entire book on the topic. Sadly, however, nowhere in the book do these authors give credit to William Dibdin—the originator of biological wastewater treatment. Ah, the fickle flame of fame!

But even without giving credit to Dibdin, Bruce Rittman and Perry McCarty have written a truly outstanding book. The first chapter is a short book on remedial microbiology (and could easily be extracted and repackaged as such). It is a wonderful review, assuming essentially no understanding of the field (as would be common for civil engineers going to environmental engineering graduate school). The second chapter covers stoichiometry and bacterial energetics—by this they mean

the energetics of bacterial growth. Chapter 3 is on microbial kinetics, followed by biofilm kinetics and reactors. These chapters, as I understand it, are what the authors mean by the "principles," because the rest of the book appears to be "applications" and includes the activated sludge process, lagoons, aerobic biofilm processes, nitrification, denitrification, phosphorus removal, drinking water treatment, anaerobic treatment by methanogenesis, detoxification of hazardous chemicals, and bioremediation. These last two excellent chapters raise this book above its competitors. So much of our practical environmental engineering work now involves the cleanup of hazardous materials that to ignore detoxification and bioremediation would have been both unfortunate and misleading. It was bad enough that they ignored William Dibdin!

This is a truly excellent book, and should be on everyone's bookshelf.

Bruce Rittmann is the John Evans Professor of Environmental Engineering at the Department of Civil Engineering at Northwestern University, and Perry McCarty is the Director of the Western Regional Hazardous Substances Research Center at Stanford University.

Quantitative Microbial Risk Assessment

Charles N. Haas, Joan B. Rose, and Charles P. Gerba, John Wiley & Sons, New York, 1999

In the 1850s epidemics raged through European cities and many theories of what caused them were advanced. Edwin Chadwick, the father of public health awareness in Victorian England, believed that odor was to blame. He put it succinctly: "All smells, if it be intense, initiate acute disease." William Farr, one of the greatest public health physicians, stoutly believed that cholera was contracted through the atmosphere, with something he called "cholerine," a zymotic material of cholera. He was an excellent epidemiologist and was one of the first to bring statistics to the assistance of disease prevention. For example, he plotted the incidence of cholera in London as a function of elevation above the River Thames and concluded that cholera must be contracted though the air, the miasma evaporating from the river and carrying these "cholerine" particles with it.

Another explanation for cholera was advanced by John Snow who suggested that cholera was a water-borne disease. Snow believed that contaminated water must contain this zymotic material that found its way from the intestines of the diseased persons to the digestive tracts of others. Chadwick did not buy this idea at all. Bad water was only a "predisposing" of the cause of cholera: it was the smell that caused it.

The 1853 cholera outbreak in London provided a classical opportunity to test Snow's theories. Most of the water companies serving water to the city drew their water from the Thames at the most convenient location. The Metropolitan Water Act of 1852 required the companies to change their source to upstream locations, away from the major contamination. By 1853 only one water company had done so, but with this change came an immediate and dramatic reduction in the incidence of cholera in that section of London served by the water company.

When the disease returned to London in 1854, one of the water companies was still providing contaminated water. John Snow plotted the incidence of cholera on a city map, thus creating the first spot map in public health history, and showed that the incidence was clearly related to the contaminated water. The pump handle was removed, the epidemic subsided, and a new chapter in public health began.

Now comes the first serious attempt to organize the risk of infectious disease in a quantitative way. Chuck Haas and his collaborators have put together a highly informative and tremendously useful book. It is, however, not for the faint at heart. The first chapters lull the (engineering) reader into believing that all is well. Yes, this is microbiology, but I know this stuff. Disease transmission, epidemiology, microbial taxonomy, clinical characterization of diseases, and the transmission routes of different pathogens—this is all understandable. The third chapter is on risk assessment, and the fourth on conducting a microbial hazard investigation. Chapter 5 is on the methods for developing occurrence and exposure data (including the old friend the Most Probable Number). So far so good. I can handle this. But then all hell breaks loose. Chapter 6, on exposure assessment, starts out with the equation for the Poisson distribution and goes downhill (or uphill, depending on your orientation) from there. What follows are subsequent chapters on conducting the dose-response assessment, conducting the risk characterization, and a systematic treatment of dose-response relationships of various pathogens, all relying heavily on statistics and mathematical models. Such a treatment of microbial pathology will no doubt be useful to pathologists and environmental microbiologists, and will provide an excellent supplementary text in many courses on public health pathology, epidemiology, and public health engineering. The book is well organized, with monster bibliographies (Chapter 2 alone has 274 references!) and reads as if it is written to be understood. It is a masterful effort.

After reading this book, would Edwin Chadwick have been convinced that cholera is caused by *Vibrio cholerae* and not by bad smells? Probably not. After all, he was a lawyer. He would have known a lot about bad smells.

Charles N. Haas is the L. D. Betz Professor of Environmental Engineering in the School of Environmental Science, Engineering, and Policy at Drexel University. Joan B. Rose is Professor in the Department of Marine Science at the University of South Florida, and Charles P. Gerba is Professor in the Department of Soil and Water Science at the University of Arizona.

Industrial Centrifugation Technology

Wallace Woon-Fong Leung, McGraw-Hill, New York, 1998

According to Thomas Hobbes, the only defensible reason for having ethics is that we agree on *how we ought to treat each other*. That is, ethics is an attempt to understand and to prescribe a contract among us that would dictate behavior beneficial to all. If you don't lie to me, I won't lie to you, and we will both be better off. Those people who lie (under certain circumstances) we punish by fines or even send them to jail.

In academic circles we also have a social contract on how we agree to treat each other. One does not, for example, plagiarize or fail to acknowledge another's contribution. No doubt some unintentional "borrowing" takes place because it is often difficult to remember who did what, especially if the work attains a level of commonality. How many textbooks, for example, reference the origin of the BOD test? The credit is obscure, with the most likely contender being E. J. Theriault who published "The Oxygen Demand of Polluted Waters" as a Public Health Service Bulletin in 1927 and first reported measurements for the deoxygenation constant. The concept of the BOD is so well established that we no longer reference the original contributors, whoever they might have been.

Sometimes the credit for the original work gets lost and no matter how hard you try, you cannot find it. For example, years ago I found some neat tabulations of species diversity and this was used to develop a very clever "diversity index." I used this in class for many years to illustrate how the health of an ecosystem can be quantitatively evaluated. But I misplaced and forgot the source of this gem, and when I went to include it in a book, I was in trouble. I spent a full day in a library trying to track it down and finally gave up and did not use it in the book. I learned, again, the importance of writing down the full citation.

I thought of the problems of attribution when I started to read *Industrial Centrifugation Technology*. Wallace Leung has for many years been with Bird Machine Company, manufacturer of centrifuges for industry and municipalities. The book is based on a series of workshops he gave for an organization that makes money giving workshops.

When I received the book in the mail, I started to leaf through it, looking for familiar things—stuff that I and other centrifuge people had written years ago. I found some of them, but there was no attribution. I figured the author had simply forgotten where the original material came from and for that reason neglected to attribute it. I was ready to be magnanimous. But then I read further and realized that the lack of attribution was not just a single oversight. From the lack of references and from the way the book reads, the development of centrifugal dewatering theory appears to be mostly the author's own work. Many of the references at the end of the chapters are to his own patents or to articles he has written in journals, giving the impression that he is the lone world expert in centrifugation. People like Charlie Ambler, Fred Keith, Orrie Albertson, Dick Moll (recently retired from Alfa-Laval/Sharples), Ludovico Spinosa (Italy), M. E. O'K. Trowbridge (England) and even people from Bird Machine like Bill White, Gene Guidi, and Cliff Amaro, all who did pioneering work in centrifuges, are never referenced. To drive home his own importance, Leung even introduces a dimensionless number which he calls the "Leung Number"! Now *that* takes chutzpah!

I know Wallace Leung. He is a nice guy, and I am sure he did not intend to be unethical. It is hard to believe, however, that he does not know how to write a professional book that gives credit to those who have gone before him.

With that bias in my head, I started to read the book more carefully, hoping that I would find a useful text nevertheless. Unfortunately, I had to conclude that the selective use of information made the book unusable. In the introduction, the author admits that proprietary information is not included in the book. I sympathize with him. When I briefly worked for Bird Machine in 1970, we had to get approval all the way to the president of the company before we were able to publish a paper. They were super-careful about divulging proprietary information, although my sense was that there was so little of it that they felt they had to create an aura of secrecy to make themselves look better. I was once told to not publish a paper

because the information was proprietary, even though I showed them that the information was from a 1938 mining engineering paper! Leung no doubt had the same restrictions on his work, and this probably greatly affected the final product.

Nevertheless, how on earth could McGraw-Hill have allowed such a book to be published? The manuscript was reviewed by a number of eminent people (including Frank Tiller of the University of Houston). Should they not have caught the glaring omissions and missing attributions and advised the author accordingly?

Since there have been no books on sludge dewatering for many years, I had hoped that Leung's book would provide us with new insights and technical developments that we can use in our courses and in our research. Admittedly there are some interesting chapters that can be useful in dewatering research, but overall this book is a keen disappointment.

Wallace Woon-Fong Leung is an engineer with Bird Machine Company in South Walpole, Massachusetts.

Canaries on the Rim: Living Downwind in the West

Chip Ward, Verso, London, 1999

During the golden age of the Roman Empire, the goddess of the hearth, Vesta, was worshiped in a temple that contained a perpetual fire, tended by six virgins. The Vestal Virgins were highly respected and took on demi-god status within the community. Mortals were not allowed to even touch them. Occasionally, one of the Vestal Virgins fell from grace and had a liaison (I love that word! Sounds so much better than "shacked up.") When this violation was discovered, the offending Virgin was led to a deep underground cell, given some bread and water, and left to die. This punishment seemed to be a compromise between two strict rules: do not touch the Vestal Virgin, and the Vestal Virgin must remain chaste or be put to death. By leaving her in the underground cell to die, she was not touched by anyone, and yet she paid for her transgression. The lore of the Vestal Virgins illustrates that there are two ways to kill anything, be it a human or any other living thing: by harming it directly, or killing it indirectly by removing the sustaining environment.

The Great Basin in Utah and Nevada is a sustaining environment for millions of people, but their lives are threatened by poisoning the environment in which they are forced to live. This region has become a testing ground for chemical weapons, a burial site for obsolete munitions, and a convenient place to site the industries that produce toxic waste or emit air pollutants. The U.S. Army has for years been directly culpable, always invoking "national security" to get away with murder, and the state agencies and the EPA have proven politically ineffective in protecting the citizens.

Chip Ward, who had some years earlier moved his family to the Great Basin area in order to find peace and open space, discovered that industries blatantly poisoned the air, the land, and its own workers, that toxic waste incinerators leaked pollutants into the air, and most importantly, that federal installations took advantage of the sparsely populated region in order to carry out highly dangerous activities. The most bothersome part of this story is the arrogance of the U.S. Army, which during the Cold War had tunnel vision. We had to beat the Russians at any cost. If this meant killing thousands of American citizens, then this was simply the price we had to pay.

This book is about the fight that Chip Ward and his friends have waged over the past 20 years to bring both the government and the private sector to its senses. It is, as one reviewer has said, a "new classic tale of American heroism." The tale is told modestly, with humor and insight. It seldom veers off into anger—although he and his neighbors had every right to be angry. As I read his account of the battles waged against big industry and big government, I found that I was getting angry myself, and I began to wonder how I could get some names and addresses so I could help kick butt. I was ready to go to battle.

This is a book right out of the activism of the 1960s, when my generation believed that we could actually do something to save the world. I am happy to see that such optimism still exists in this country. Ward shows that good people can win the fight against the polluters and that we can be the "somebody" who "should do something" about the problem. *Canaries on the Rim* is a good read and a wonderful tale, and I recommend it highly.

Chip Ward manages the Utah library development program and lives in Grantsville, Utah.

The First International Congress on Ultraviolet Technologies

June 14-16, 2001, Washington D.C., USA

Sponsored by the International Ultraviolet Association

The conference will cover the following topics:

- UV Disinfection for Drinking Water, Process Water, Wastewater and Air
- UV Disinfection: Design and Full-Scale Experiences
- UV Disinfection Regulatory Approval Process
- UV Disinfection Hardware Technological Advances
- Operators Forum: UV Systems
- UV-based Advanced Oxidation
- UV Curing
- UV for Food and Packaging Disinfection
- UV Photochemistry/Photobiology

If you wish to be placed on the mailing list for The First International Congress on Ultraviolet Technologies, mail IUVA Congress Secretariat, P.O. Box 1110, Ayr, ON, Canada N0B 1E0, Tel: 519-632-8190; Fax: 519-632-9827; email: kharvey@iuva.org. Check out the latest on the conference at www.IUVA.org.

Morgan Symposium Follow-Up

Here's some info on sponsorships and student awards from the Morgan symposium, CHEMICAL SPECIATION AND REACTIVITY IN WATER CHEMISTRY AND WATER TECHNOLOGY, which was held at the 220th American Chemical Society (ACS) National Meeting, August 20-25, 2000, in Washington, DC. Any publicity that could be provided for our sponsors and student awardees would be greatly appreciated. Thanks much, Janet Hering.

Sponsors: Montgomery-Watson, California Air Resources Board (CARB), ACS Environmental Chemistry Division, Association of Environmental Engineering & Science Professors (AEESP), John Wiley & Sons

Student award winners:
AEESP award for best student presentation ($500):
John E. Villinski (The University of Arizona)
Reductive Dissolution of MnO_2 By Fe(II): Effects of Chemical Gradients and Intermediate Phase Structural Information

Wiley Student Prizes (technical books donated by Wiley):
Christina C. Davis (Virginia Tech)
Modeling Silica Sorption to Ferric Hydroxide
Owen W. Duckworth (Harvard University)
Relationship Between Rates of Ligand-Promoted Dissolution of Hematite and the Iron-Ligand Surface Structures of C1 To C6 Dicarboxylic Acids

Cetin Kantar (Colorado School of Mines)
Experimental Investigation and Reactive Transport Modeling of U(Vi) in the Presence of Citric Acid

Theodore P. Klupinski (The Ohio State University)
Reduction of Pentachloronitrobenzene by Ferrous Iron Species

Gregory P. Miller (New Mexico Institute of Mining and Technology)
Modeling Arsenic Mobility in Natural Systems

Maggie G. Y. Pee (The Ohio State University)
Sonochemical Degradation of Surfactants

Edward Peltier (Northwestern University)
Zinc Speciation and Availability in an Impacted Wetland System

Pascal Salaün (University of Geneva)
Development of Permeation Liquid Membrane Systems for In Situ Trace Metal Speciation in Water

Bettina Schrick (The Pennsylvania State University)
Remediation of Chlorinated Hydrocarbons Using Supported Zero Valent Nickel-Iron Nanoparticles

Kavitha Subramaniam (Georgia Institute of Technology)
Equilibria and Kinetics of Copper Sorption and Its Effects on Flocculation of Colloidal Oxide Particles

Jennifer W. Tonkin (University of Washington)
Development of a Database For Sorption Modeling on Manganese Oxide

Paras I. Trivedi (New Jersey Institute of Technology)
Macroscopic and Spectroscopic Studies of Transition Metal Sorption to Hydrous Metal Oxides in Aquatic Environments

Samuel M. Webb (Northwestern University)
Analytical Electron Microscopy Characterization of Zinc Speciation in a Contaminated System

The Environmental and Water Resourses Institute
American Society of Civil Engineers

Announces the Annual Student and Younger Member Competitions

2001 Photography Contest

ASCE student chapter or club members and younger members are invited to submit photographs appropriate to the theme of the congress, "*Bridging the Gap: Meeting the World's Water and Environmental Resources Challenges.*" One photograph will be selected to appear on the cover of the proceedings, and travel will be provided to the conference. Mail entries to arrive by January 31, 2001 to Dr. Jim Groves at VMI, email: grovesjr@mail.vmi.edu.

Technical Paper Competition

Any member of an ASCE Student Chapter is eligible to submit a 6-8 page paper. Any subject matter related in technical aspect to environmental or water resources engineering will be accepted, including laboratory, field studies or summaries of thesis research. There are two categories: graduate or undergraduate. Cash awards and travel to the conference for paper presentation will be awarded to five students. Inquiries regarding this competition may be addressed to Dr. Kathleen Leonard, email: leonard@cee.uah.edu or ph: 256-824-6423. An electronic copy of the paper must be received by close of business on February 16, 2001.

Parsons Brinkerhoff Capstone Design Contest

Currently all undergraduate civil engineering programs are required to include a "capstone" design experience, and schools are strongly urged to require their students to work in teams. Four finalist teams will be selected to compete at the EWRI World Water Congress. Each student team will orally present their project to a panel of industry judges during a special session at the conference. Each team will receive up to $1000 for travel reimbursement and a one-year membership in EWRI. Plaques will be awarded, and the members of the top team will win a one-year subscription to an ASCE journal of their choice. Entry Information: To enter, send a four-page project description to include the Faculty Advisor's recommendation to Professor Robert G. Traver, ph: 610-519-7899, email: Robert.Traver@VILL.EDU, by March 2, 2001.

Awards will be presented at
World Water and Environmental Resources Conference
The Clarion Plaza Hotel
Orlando, Florida
May 20 - 24, 2001

Additional conference information can be found at www.asce.org/conferences.

NOTE: The AEESP membership application form is available online at **http://www.aeesp.org**, under "Membership Information" and "Becoming a Member."

Application for Membership

Association of Environmental Engineering and Science Professors

Name: _____

Title: _____

Department: _____

Business address: _____

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Fax no: _____

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Applying for: ____ Regular Member Rank: _____
____ Affiliate Member
____ Student Member Advisor: _____
____ Sustaining Member

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.

RANK / STATUS	ANNUAL DUES
Regular Member (Professor)	$ 75.00
Regular Member (Assoc. Professor)	$ 60.00
Regular Member (Asst. Professor)	$ 40.00
Affiliate Member	$ 50.00
Student Member	$ 15.00
Sustaining Member	$500.00

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

Kurtis G. Paterson
Civil and Environmental Engineering
Michigan Technological University
1400 Townsend Drive
Houghton, MI 49931-1295

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

_____
Signature Date

AEESP Officers

AEESP Board of Directors

AEESP Sustaining Members

The *AEESP Newsletter* is published three times a year in January, April and September by the Association of Environmental Engineering and Science Professors. Issues are published online at **http://www.uidaho.edu/aeesp**.

Please send address changes to:
Joanne Fetzner, AEESP Business Office, 2208 Harrington Court, Champaign, IL 61821; phone (217) 398-6969; fax (217) 355-9232; e-mail jfetzner@uiuc.edu.

Please send submissions and comments to the editor:
Roger Ely, AEESP Newsletter Editor, Department of Chemical Engineering, P.O. Box 208286, Yale University, New Haven, CT 06520-8286; phone (203) 432-4386; fax (203) 432-2881; e-mail roger.ely@yale.edu.
Editorial Asst.: Cindy Lawrence, cynthial@uidaho.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.

Association of Environmental Engineering and Science Professors Newsletter
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