Research Conference

The AEEP is sponsoring its third research conference. The theme of the conference is Fundamental Research Directions in Environmental Engineering. The conference will be held in Washington, D.C., November 13-15, 1988; additional information regarding location and registration for the conference is provided elsewhere in this newsletter, as well as under separate mailings. The conference will address water, air and land environments and will therefore be multidisciplinary. The conference will be concerned with pollutant emissions, flow through the environment, and subsequent effects, as well as the link between these environmental science issues and policy questions.

The conference follows its predecessor by a period of six years. A considerable amount of environmental legislation has been enacted in this interval, much of which has focused upon toxic and hazardous substances. These issues necessitate comprehensive approaches to managing and controlling environmental problems. While the problem scale may be local, regional, national or global, the need for optimal utilization of available resources is common to all scales. In this context, it is time for an assessment of fundamental research needs in environmental engineering as broadly circumscribed. The critical environmental problems of the future will entail intermedia processes in conjunction with complex societal and technical issues. The conference will address these matters and thus will help answer questions on the directions for the environmental engineer/scientist for the 21st century.

The conference will address approaches to achieve timely implementation of environmental research in order to help guide environmental policy and assist technology development. Four discussion sessions are planned. Each of the first three sessions will be focused on processes with a specific scientific base — physical, chemical, or biological. Within each process area, individual researchers will assess research directions within a single medium — land, air or water. The fourth session will focus on intermedia processes and the identification of comprehensive approaches to environmental problems. One segment of the program will be devoted to this assessment.

The format for the program will consist of short formal presentations, followed by prepared discussions. It is intended that the time allocated for general discussion from the audience will be as long as that given to prepared presentations. In this manner the program will emphasize the exchange of viewpoints and engage the participation of AEEP members. Reprints of conference papers will be provided to registrants prior to the conference. This research conference is an important activity of the AEEP; please make plans now to attend the conference in November.

Annual Luncheon

As is our tradition, the AEEP will sponsor an annual membership luncheon Monday, October 3, 1988 in Dallas, Texas during the Water Pollution Control Federation meeting (see Announcement and Reservoir Form at end of Newsletter). This luncheon will celebrate the 25th Anniversary of the AEEP. Preparations have been made to make this a special event, including perspectives on the history of the organization and its future directions. The luncheon will be held at the Hyatt Regency Hotel, across the street from the Dallas Convention Center beginning at 11:45 A.M. This will be a special event for which we can all join in celebration of 25 years of service to our profession.

Richard G. Lathc
President
Conference on Fundamental Research Directions in Environmental Engineering

November 13-15, 1988, Key Bridge Marriott Hotel, Arlington, Virginia

The Association of Environmental Engineering Professors is sponsoring a conference on Fundamental Research Directions in Environmental Engineering (see Registration form at end of NewsLetter). The focus of the conference is on discussion of comprehensive approaches for managing and controlling environmental problems using a multidisciplinary and multimedia perspective. Four sessions are planned. Each of the first three sessions will address processes with a specific scientific base — physical, chemical or biological. The fourth session will address intermediate processes. In addition to specific research themes, the conference will consider how environmental science research may help guide national environmental policy while assisting the development of cost-effective control strategies. The manner in which research results may be effectively transmitted from research "producers" to research "users" will also be discussed.

The AEEP has sponsored research conferences in 1977 and 1982 on the general topics of water and wastewater systems. This conference will be wider in scope than the two previous meetings; it will be directed towards air, land and water environments. The conference is being supported in part by the National Science Foundation with supplemental funding from the Environmental Protection Agency. Registrants will receive a packet of position papers and prepared discussions prior to the meeting. It is intended that sufficient time will be allowed following each presentation for general discussion involving conference attendees. The conference is open to all interested parties, and will commence on Sunday evening November 13 with a presentation and a reception. The formal program will begin on Monday, November 14 at 8:30 AM and conclude at 1:00 PM on Tuesday, November 15.

Please make plans now to attend the conference. A list of speakers and a schedule of events will be provided in a subsequent mailing. The AEEP conference will coincide with a portion of the 9th Annual Meeting of the Society of Environmental Toxicology and Chemistry to be held at the nearby Hyatt Regency Hotel in Arlington, VA. AEEP members may find it convenient to attend both the research conference and the SEAC meeting.

AEEP Workshop at the WPCF Conference

Charles Eckert and Carl Lira will present on AEEP Workshop on Sunday, October 2nd, at the WPCF Conference in Dallas. The workshop is entitled "Reactions and Extractions Using Supercritical Fluids", and will be held in the Dallas Convention Center, Room N-215, from 1 to 5 PM.

Professor Eckert is from the University of Illinois. He is a member of the National Academy of Engineering, has directed over 37 Ph.D. theses, and has published extensively in the area of supercritical fluids (SCF). A great deal of his work has dealt with environmental applications of this technology.

SCF has been used for the direct extraction of DDT, trichloroethylene, and other toxic organic materials from soils, as a regeneration technique for granular activated carbon or polymeric adsorbents, for the direct destruction of organic waste streams by supercritical water oxidation, and for the precombustion desulfurization of high-sulfur coals. Professors Eckert and Lira will present an Overview of SCF, Fundamentals of Phase Equilibria that are necessary in order to understand the process, General Applications, Environmental Applications, and Cost Estimates for processes such as wet oxidation, soil detoxification, and GIc regeneration.

You may register in advance (Brian Dempsey, 212 Sackett building, Penn State University, University Park, PA 16802) or on the door. Registration is $25 for AEEP members and $10 for students. Notes will be provided.

AEEP Distinguished Lecturer for 1989

Professor Peter Grou of Czechoslovakia has been selected as the AEEP's Distinguished Lecturer for 1989. Information concerning the selection and details of his lecture topics was not available for this issue of the NewsLetter; however, Marecik T. Suldin (University of Illinois, 217/333-9141) will soon have the information and prepare an announcement for AEEP members. Professor Grou's address is as follows:

Prof. Peter Grou
VCHT
Prague Institute of Chemical Technology
Sukabdenova 55
CS 166 28
Prague, Czechoslovakia
Finally, a little bit of information about the PCWSR. The Council is a 10 member advisory committee to AWWARF representing diverse groups from the professional, environmental, and consumer segments of the water supply industry. Dr. Edwald has been serving as AWWARF's representative since December 1986 and will continue until December 1989. The major issues the Council dealt with over the last 18 months has been the Unsolicited Research Program and the Foundation's Five Year Research Plan. As mentioned earlier, the Foundation upon recommendation of the Council increased its percentage funding of unsolicited research. The Five Year Research Plan was reviewed by the Council during 1987, approved by AWWARF's Board of Trustees in January 1988, and is now available from AWWARF.

AWWARF members are encouraged to write to Dr. Edwald regarding their views and ideas pertaining to AWWARF.

**AEEP Register of Graduate Programs**

Efforts are underway to compile and publish the next edition of AEEP's Register of Environmental Engineering Graduate Programs. The last edition, published in 1984, was considered successful based upon sales to libraries and other groups around the U.S. and Canada. Co-editors Bill Knocke (Virginia Polytechnic Institute and State University) and Cory Amst (University of Arizona) have developed the following publication schedule for the 1989 edition:

**July 15, 1988** Mailing of instruction packets to candidates regarding submission of proposals.

**October 15, 1988** Deadline for submission of completed proposal.


If your environmental engineering program did not participate in the 1984 edition of the Register, but wish to be involved in the 1989 edition, please write for submission instructions to Dr. W. R. Knocke, Department of Civil Engineering, 200 Patton Hall, VPI & SU, Blacksburg, Virginia 24061.

**Member Address Changes**

David W. Ostendorf is on sabbatical leave from the University of Massachusetts until June 1, 1989. He may be contacted at the following address:

Dr. David W. Ostendorf
Robert & Ken Environmental Research Lab
U.S. Environmental Protection Agency
P.O. Box 1193
Ada, OK 74825
Deadline for the December, 1988, Newsletter

Please mail articles for the December issue of the AEEP Newsletter to the editor, G. D. Boardman, by November 1, 1988.

GENERAL NEWS

Environment Canada’s Wastewater Technology Centre

The Wastewater Technology Centre (WTC) is operated by Environment Canada, the department of environment of the federal government of Canada. The main responsibility of the Centre is to develop, demonstrate, and optimize processes for treating and disposing of wastewaters and sludges. In addition, WTC staff provide advice on technical issues to industries, municipalities, and other government agencies.

WTC’s research and development mandate is carried out by approximately 50 full-time staff and a number of contractors. Facilities of the WTC building in Burlington, Ontario, enable research to be conducted at bench-scale or pilot-scale using municipal sewage piped from the City of Burlington or industrial wastes and sludges trucked to the Centre and stored in outside tanks. Research is also carried out at full-scale municipal and industrial sites located across Canada.

The following project descriptions provide a brief overview of the scope of work sponsored and conducted by the Wastewater Technology Centre:

1. Dynamic Modelling and Expert Systems in Wastewater Engineering - With financial support from the WTC and other sponsors, a major research project is underway at McMaster University to develop a comprehensive library of dynamic models for major biological and physico-chemical treatment processes. Software is being designed to facilitate interactive simulations using these models, enabling users to intervene in a simulation in progress, for instance by changing the recycle in an activated sludge plant, and keep the responses in the simulated process behavior. By combining an expert system — a program which can perform at or near the level of a human expert — with simulations from dynamic models, a system is being created for the control and operation of wastewater treatment plants.

2. Stripping of Volatile Organic Contaminants in Municipal Wastewater Treatment Plants — On behalf of the Ministry of Environment of the province of Ontario, the WTC is conducting a comprehensive study to measure and predict the release of volatile organic compounds to the atmosphere. At full-scale, oil-gas samples have been collected at selected plants in conjunction with a wastewater and sludge sampling program of 80 Ontario municipal treatment plants. Using a pilot plant, theoretical models for predicting the fate of volatile organic compounds will be developed and tested. The objective of these studies is to develop an understanding of the fate of hazardous compounds entering municipal treatment plants so that appropriate regulations can be established by the province.

3. Control of Polymer Addition for Sludge Dewatering — The WTC has developed, over the past ten years, a measurement and control system for polymer addition to belt filter presses. Prior to dewatering, the viscosity of a sample is measured and compared to the viscosity of an optimally conditioned sample to determine correct polymer dosage. If the dosage is not optimum, the controller changes the rate of the polymer feed pump. Following evaluation of the sludge conditioning controller at a full-scale treatment plant, the control system was licensed to Zeron Environmental Inc. of Burlington, Ontario.

Other areas in which significant research is being conducted include: the application of high rate anaerobic technology for the pretreatment of high strength organic wastes, computer control of municipal activated sludge plants, land application of sludge, the characterization and treatment of water produced from enhanced oil recovery, and the assessment of solid waste leaching and disposal.

The Wastewater Technology Centre supports Canadian universities in teaching environmental engineers and conducting research. The WTC currently funds a number of major research projects at Canadian universities. WTC professional staff are encouraged to serve as part-time lecturers in environmental engineering. A number of research or demonstration projects are conducted using a combined team of university and WTC personnel, frequently during such programs conducted at WTC facilities, senior WTC personnel supervise graduating students in their thesis work. Finally, co-op and summer employment programs at the Centre offer undergraduates the opportunity to spend a work term in a research environment and gain meaningful engineering experience.
1989 AWWA Academic Achievement Award Competition

The American Water Works Association recently announced the opening of the 1989 AWWA Academic Achievement Award Competition. Awards are made annually to graduate students whose theses or dissertations are judged to have significant value to the water supply industry. The Association established this award to give recognition to those students who have made outstanding contributions to the field of public water supply through their work at a university. Professors who serve as major advisors to winners are also recognized during the award program and receive a commemorative plaque. The competition is open to students majoring in any subject provided the work is directly related to the drinking water supply industry.

The deadline for entries for the next competition (for theses completed between 9/1/87 and 9/1/88) is October 1, 1988. Entry forms and additional information can be obtained from the American Water Works Association headquarter at 303-774-7711 (ext. 2307).

Availability of Textbook Concerning "Environmental Technology in Developing Countries"

Environmental Technology in Developing Countries (ETDC textbook) is written by Harvey F. Ludwig, J. W. Evans, W. Y. Brockelman, and B. N. Lobhoni. The authors have experience in both individual country and developing country environmental technology (IC/ET and IC/EE/I), and is written from the DC point of view; i.e., how to solve environmental problems using appropriate technology at budget levels much less than available in the ICs for the same problems.

The ETDC textbook comprises two volumes totaling over 1,000 pages. Volume I deals with overall ET issues including environmental impact assessment, regional economic-environmental development planning, industrial waste permit systems, and environmental quality monitoring and standards. Volume II deals with individual environmental sector problems such as water supply, pollution control, forestry and wildlife, watershed management, tourism resources, precious ecology, etc.

The ETDC textbook is available from the Interstate International Publishing Company, P.O. Box 8-101, Bangkok, Thailand, at a cost of US$ 100 plus mailing costs (maximum of $40).

New Books Available from ASCE

Mathematical Models in Coastal Engineering
Basic methodology for the formulation and numerical solution of mathematical models in coastal engineering is provided in this book. Edited by Christopher G. Koutitas
Published by Pentech press, Ltd., 1988
165 pages, $42.00

Specification for Ground Treatment
The papers in this two-volume set provide guidance for the non-specialist based on practical experience of ground treatment contracts. Edited by Thomas Telford, Ltd., 1987
64 pages, $18.00

Controlling Waterborne Giardiasis
A State-of-the-Art Review prepared under the auspices of the Committee on Water Supply and Resources Management of the Environmental Engineering Division. Edited by Gary S. Logsdon
Published by ASCE, 1988
112 pages, $16.00

Energy/Environment Opportunities for Civil Engineers
Proceedings of sessions sponsored by the Energy Division—Nashville, TN—May 9-11, 1988. These papers discuss opportunities that have developed for engineers to solve problems resulting from the conflict between the need for energy development projects and the environmental acceptability of such project. Edited by Ronald D. Neufeld
Published by ASCE, June, 1988
158 pages, $16.00

Who's Who in Environmental Engineering
The source for those needing Board-Certified environmental experts with proven special knowledge; listed by specialty, state, and country. Published by AEE, April, 1988
166 pages, $50.00

Critical Water Issues and Computer Applications
Proceedings of a conference sponsored by the Water Resources Planning and Management Division—Norfolk, Virginia—June 1-3, 1988. Edited by Mike Isackson
Published by ASCE, June, 1988
408 pages, $35.00

Pipeline Infrastructure
Proceedings of a conference sponsored by the Pipeline Division—Boston, Massachusetts—June 6-7, 1988. Published by ASCE, June, 1988
590 pages, $44.00

Marine Treatment of Sewage and Sludge
302 pages, $36.00
Environmental Engineering Selection Guide

The 1988 edition of the Environmental Engineering Selection Guide is now available from the American Academy of Environmental Engineers. Upon request, the Guide is provided free of charge to those that employ environmental engineers. The Guide is useful for those seeking to locate environmental engineering experts for consulting assignments. It also lists the accredited environmental engineering programs at U. S. universities and professors who are certified environmental engineering specialists. This year a new section has been included to list those certified environmental engineering specialists employed in the manufacture and selling of pollution control equipment.

The American Academy of Environmental Engineers, founded in 1955, is dedicated to quality in environmental engineering practice. Through the mechanism of specialty certification, it identifies for the public those individuals who have proven special knowledge in one or more of seven (7) areas of environmental engineering practice. The specialties certified by the Academy are: Air Pollution Control, General Environmental Engineering, Hazardous Waste Management, Industrial Hygiene, Radiation Protection, Solid Waste Management, and Water Supply/Water Pollution Control.

To obtain a free copy of the 1988 Environmental Engineering Selection Guide, write on your letterhead to the American Academy of Environmental Engineers, 132 Holiday Court, Suite 205, Annapolis, Maryland 21401.

PERSONAL ACCOMPLISHMENTS

AWWA Academic Achievement Awards

The American Water Works Association gives AWWA Academic Achievement Awards annually to the M.S. theses and Ph.D. dissertations judged to have the most significant value to the water supply industry. The awards consist of checks for $1000 and $500 for the first and second students in each category, respectively, and plaques for the students and their major professors. The winners of the 1988 Academic Achievement Awards were:

Doctoral Dissertations

First Place: Barrent J., Loubser. Colorado State University, under the direction of Dr. Johannes Gessler. Title: "Storage Sizing in Pipe Network Optimization".

Second Place: Donald L. Schmiegler. The University of North Carolina at Chapel Hill, under the direction of Dr. Donald T. Louia. Title: "The Application of Zonal Pricing to a Metropolitan Water Utility".

Master’s Theses

First Place: William B. Bowlinger. The University of North Carolina at Chapel Hill, under the direction of Dr. Phillip C. Binges. Title: "Factors Affecting the Stability of Particles in Natural Water and Their Susceptibility to Ozone-Induced Microflocculation".

Second Place: Steven R. Lavinder. Virginia Polytechnic Institute and State University, under the direction of Dr. Robert C. Hoenh. Title: "Evolution of Activated Carbon Processes for Removing Trimethanamethane Precursors from a Surface Water Impoundment".

Centennial Professor at Vanderbilt

The Department of Civil and Environmental Engineering at Vanderbilt University appointed Richard E. Speece as Centennial Professor of Civil and Environmental Engineering, on June 1, 1988. Dr. Speece won the AEEP Distinguished Faculty Award in 1970 and was AEEP Distinguished Lecturer in 1978. He won the Engineering Science Award for directing the outstanding Ph.D. dissertation in 1982. He served on the AEEP Board of Directors from 1980 to 1983 and presented the annual AEEP workshop at the Purdue Conference in 1985.

AWWA Best Paper Award

Professors Robert G. Heehn and John T. Novak, and William E. Cumblie, a former student who is now an engineer with CHSWH Engineers at Boston, were awarded the American Water Works Association’s 1988 Best Paper Award in the water quality division. The paper, which was published in the Journal of the Association in June, 1987, addressed the effects of storage and preoxidation on sludge and water quality.
ASCE's Julian Hinds Award

Robert L. Smith, Water Resources Consultant for Black and Veatch Consulting Engineers, Kansas City, MO, is the recipient of the American Society of Civil Engineers (ASCE) 1988 Julian Hinds Award. Smith received the award for his contribution to the advancement of water resources planning and management, as an educator and as a local, state and national official. Prof. Smith has been involved in academia for over 40 years and since 1976 has held the position of Deane Axiers Professor of Civil Engineering at the University of Kansas. In addition, Smith has worked on a number of short-term consulting and advisory assignments for the Federal and State Governments.

The Julian Hinds Award was established in 1974 in recognition of the outstanding professional contribution of Julian Hinds, an Honorary Member of ASCE.

ASCE's Tipton Award

Syed S. Kimani, consultant to the World Bank, Washington, D.C., has been named the winner of the American Society of Civil Engineers' 1988 Royce J. Tipton Award. Kimani has made significant contributions to the advancements of irrigation and drainage engineering.

Mr. Kimani was the principal author of the Indus Basin Plan, an engineering solution used as the basis for settling the Indus Water dispute between India and Pakistan. Following the signing of the Indus Water treaty in 1960, Kimani was appointed Chief Engineer responsible for administering funds for implementing the Indus Basin Project, a resources development program comprised of two large dams, nine large inter-river link canals and six barrages.

ASCE's J. C. Stevens Award

Willi H. Hager, a Senior Research Engineer for the Swiss government, Lausanne, Switzerland, was named recipient of the American Society of Civil Engineers (ASCE) 1988 J. C. Stevens Award.

The award, which was established in 1943 to give recognition to the best discussion published by ASCE in the field of hydraulics each year, will be presented to Hager for his discussion on the paper titled, "Separation Zone at Open Channel Juctions".

CONFERENCES AND EDUCATIONAL PROGRAMS

Call for Papers - 1988 AGU Fall Meeting, San Francisco

Symposium on Modeling Fate and Transport of Organics in Groundwater Systems

In the last few years, significant strides have been made in our ability to understand and model the processes associated with the transport and fate of organic chemicals in groundwater systems. Work is proceeding on the description of abiotic and biotic transformation processes as well as in the quantification of the physics of flow and transport processes. Ongoing investigations at a number of field sites are offering researchers the opportunity to test and calibrate conceptual models. Because of the complexity of real contamination scenarios, it is evident that future progress will be made primarily through the interdisciplinary cooperation of investigators from diverse backgrounds.

The Groundwater Committee of the American Geophysical Union is sponsoring a symposium designed to bring together such investigators to foster the exchange of information and ideas. The focus of the session will be on the modeling of transport and transformation processes associated with organic chemical contamination of groundwater systems, as well as research concerned with characterizing and modeling geochemical processes and conditions that are relevant to chemical speciation and to reaction equilibria and rates. Emphasis will be placed on the development and validation of mathematical models which describe such processes. Papers are solicited in this broad area and may include results of theoretical, numerical, experimental, or field studies. The symposium will be held at the AGU Fall Meeting in San Francisco, California, during the week of December 5-9, 1988. Both oral and poster presentations are planned. Interested individuals are invited to submit an abstract to standard AGU format by Sept. 9, 1988, to Dr. Linda M. Abtolo, Department of Civil Engineering, The University of Michigan, Ann Arbor, MI 48109-2125, with a copy to Dr. Paul V. Roberts, Department of Civil Engineering, Stanford University, Stanford, CA 94305-4020. In addition, the abstract and two copies must also be sent to AGU Meetings, 2000 Rio Vista Avenue, Washington, D.C. 20009, by the Fall meeting abstract deadline. Further information on the symposium can be obtained by contacting Linda Abtolo at (313) 765-9564 or Paul Roberts at (415) 723-1073.

Call for Papers — AWWA Universities Forum in Los Angeles

Abstracts are now being solicited for papers to be presented at the 18th Annual Universities Forum of the American Water Works Association Annual Conference to be held in Los Angeles, June 18-22, 1989. Student presenters/authors are being sought of all
Call for Papers — IXth Ozone World Congress

June 3-8, 1989, New York, New York

The International Ozone Association will hold its IXth Ozone World Congress in the New York Marriott Marquis hotel and is seeking papers to be presented at this biannual, international, scientific and technological meeting.

The subject matter may deal with new information concerning the generation, reactions and applications of ozone in such fields as:

- Ozone Generation and Equipment
- Analytical Methods and Instruments
- Mass Transfer and Ozone Contactors
- Ozone in the Atmosphere
- Ozone-UV Reactions
- Ozone-Hydrogen Peroxide Reactions
- Disinfection and Byproducts
- Medical Applications
- Water Treatment
- Wastewater, Ground Water Treatment
- Aquatic Applications
- Odor Control
- High Purity Water Systems
- Cooling Water Treatment
- Swimming Pool and Spa Treatment
- Chemical Processing

A brief (300 word) abstract should be submitted by October 1, 1988, to:

Scientific and Technical Program Committee
International Ozone Association, INC.
83 Colwood Avenue
Norwalk, CT 06850, U.S.A.

The complete papers of the accepted presentations will be required by January 15, 1989. They will be included in the proceedings of the World Congress. The presentations are expected to be twenty minutes long, followed by a question and answer period.
Biohazards in Drinking Water
Applications of Biodegradation/Biotechnology to Hazardous Waste Remediation
Anaerobic Biodegradations of Xenobiotics
Enhanced Biotreatment for Aquatic Restoration
Modeling Applications
Environmental Chemistry
Ecotoxicology of Agricultural Chemicals
Behavioral Toxicology
Environmental Analytical Chemistry
Risk Assessment
In-Place Pollutants and Sediment Toxicity
Field Identification of Laboratory Results
Carcinogenicity in Aquatic Species
Aquatic Plant Toxicology
Ground Water Contamination
Regional Risk Assessments
Metal Chemistry and Bioremediability in Acid Waters
Global Climate Changes
Reactor Cost Expenditure and Risk Assessment
Use of Expert Systems

Possible topics for short courses include:

- QA/QC Procedures in Environmental Chemistry Laboratories
- Endanglement Assessments
- Exposure Modeling for Toxic Chemicals
- Toxicity Fractional Evaluations
- Ecological Risk Assessment

Contact:

Jerry Schnoor
University of Iowa
Environmental Engineering (3134 EB)
Iowa City, IA 52242

Tenth Annual SETAC Meeting

October 28-31, 1989, in Toronto, Ontario, Canada. SETAC's first meeting outside the U.S. will emphasize Movement and Effects of Trans-boundary Pollution, particularly in the Great Lakes and in Europe.

Current plans include a special Tenth Anniversary Symposium on the past, present, and future of environmental toxicology and chemistry. Contact:

Peter V. Hobson
Guelph Lakes Lab, for Fisheries and Aquatic Sc.
Canada Centre for Inland Waters
Box 5050
Burlington, Ontario, L7T 2K2
Canada
FAX (416) 336-4864

Engineering Foundation Conference

Engineering Foundation, in cooperation with the U.S. Environmental Protection Agency and the California Department of Health Services, is sponsoring a conference on "Engineering for Waste Reduction — II," to be held October 9-14, 1988, at the Sheraton Hotel and Spa, Santa Barbara, California. This is the second in a series focusing on the emerging field of industries, municipalities, and other sources of generation. Conference Co-Chairmen are Harry Freeman, of EPA's Hazardous Waste Engineering Laboratory and Arthur H. Purcell of the Washington-based Resource Policy Institute.

The conference will examine status and trends in waste reduction with the objective of formulating a comprehensive picture of technical and technical-related aspects of the field. It is designed to allow maximum exchange of information among participants. Its mix of plenary and informal sessions will include discussion in the following topic areas:

- Overviews, Perspectives, Regulations and Legislation
- In-Plant Activities
- Reduction of Municipal Solid Waste
- Waste Reduction by and Risk Assessments
- Industry-Specific Considerations
- Solvents and Surface Coatings
- Solar Substitutes
- Industrial Waste Recycling
- Engineering Education, Training and Technology Transfer for Waste Reduction

Attendance at Engineering Foundation Conferences is by invitation or applications. Those wishing to attend should contact the Engineering Foundation for registration information. The conference fee, which includes registration, accommodations and meals for dinner on Sunday through lunch on Friday. The tentative prices are as follows:

- Participant Double Occupancy (sharing room with another participant only) — $575.00
- Participant Single Occupancy or sharing room with spouse, other family member, etc. — $757.00
- Guest Fee Spouse, other family member, etc., double occupancy (not attending technical sessions) — $575.00

For further information contact the Engineering Foundation, 345 East 47th Street, New York, NY 10017, USA. Telephone: (212) 705-7835. Cable: ENGFUND NEW YORK. Telex: 126022.

IWEM Approves Training Material

The Institution of Water and Environmental Management has approved a course of distance learning material as suitable for students preparing for its Diploma examination. The course is produced by Flexible Learning Systems of Leicester.

The material produced by a consortium of Leicester Polytechnic, Imperial College and Loughborough University consists of 21 work units each requiring about 10 hours of self study. In connection with a work unit on the treatment and disposal of sludge,
Details of the IIMB Diploma examination are available from Rachel Dudman, IEM, London, 01-430-0949.

EMPLOYMENT OPPORTUNITIES

University of Colorado
Faculty Position in Environmental Engineering

A tenure track position in environmental engineering is available in the Department of Civil, Environmental and Architectural Engineering at the University of Colorado at Boulder. Duties include conducting sponsored research and teaching both graduate and undergraduate level courses. A candidate in the areas of either water chemistry, physical-chemical treatment processes or hazardous substance management and control is preferred. The Department is especially interested in an experienced individual to take a leadership role among a vigorous group of environmental and water resources engineering faculty. The position will be filled at the Full or Associate Professor level after January, 1989.

Send resumes and names of three references to Chairman, Environmental Engineering Search Committee, Dept. of CEAE, Campus Box 428, University of Colorado, Boulder, CO 80309-0428. Closing date for applications is October 15, 1988.

The University of Colorado at Boulder has a strong institutional commitment to the principle of diversity. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities and disabled individuals.

Cornell University
Temporary Environmental Engineering Faculty Position

The Environmental Engineering program in the School of Civil and Environmental Engineering of Cornell University seeks a temporary faculty member during the Fall 1988 semester. The position requires a PhD and suitable background. It is appropriate for an established faculty member on sabbatical leave from his or her university or a recent PhD seeking temporary experience in the Cornell Faculty.

The position is available while Professor Leonard Lion is on leave, and specific teaching duties most likely will be in the area of Professor Lion’s specialties, aquatic chemistry and physical and chemical processes.

Prospective candidates should send a resume and letter of application to:
Richard I. Dick
118 Hollister Hall
Cornell University
Ithaca, New York 14853
An equal opportunity/affirmative action employer.

University of Delaware
Faculty Position in Environmental Engineering

The Department of Civil Engineering at the University of Delaware invites applicants for a tenure or tenure-track position in Environmental Engineering. The rank will depend on the qualifications and experience of the applicant. Expertise in hazardous waste or wastewater treatment will be preferred. Major responsibilities include teaching both undergraduate and graduate courses and developing a strong research program. Senior candidates must have an outstanding record of research; junior candidates will be expected to demonstrate exceptional potential for scholarly achievement. A Ph.D. degree and evidence of excellent teaching and research are required. Candidates with at least one degree or teaching experience in civil and/or environmental engineering are desirable. Applications received by November 30, 1988, will be given first consideration; however, the search will continue until the position is filled. Applicants should send a resume and the names of three references to: Professor C. P. Huang, Chair, Search Committee, Department of Civil Engineering, University of Delaware, Newark, DE 19716. The University of Delaware is an Affirmative Action, Equal Opportunity Employer.

University of Massachusetts
Postdoctoral Research Associate in the Environmental Engineering Program

A position is available at the postdoctoral associate level for research under the direction of Dr. David A. Reckhow in the Environmental Engineering Program of the University of Massachusetts. The preferred starting date is September 1, 1988, with an initial appointment of one year subject to renewal. Salary will
be $23,000 for 12 months. Applications will be ac-
ccepted until the position is filled.

Description of Research: This position is for full-time research on the reactions between ozone and na-
tural aquatic organic matter. The research is funded by the US EPA, and it has important implications concerning the current use of ozone in drinking wa-
ter treatment. Responsibilities include designing and conducting experiments to assess chemical kinetics and changes in gross characteristics of the organic matter as a result of ozonation. This work will include o-
castic matter fractionation, functional group anal-
ysis, determination of aluminum and cadmium complexation capacity, molecular size analysis, and perhaps GC/MS analysis of oxidation products.

Qualifications: Candidates should hold a Ph.D. in environmental engineering or environmental chem-
istry. Research experience in chemical kinetics, trace organic chemical analysis, and ozone treat-
ment of drinking water is preferred, but not required.

Persons wishing to be considered for this position should send a curriculum vita, three letters of re-
commendation, and a statement of research inter-
est to Dr. David A. Reckhow, Department of Civil Engineering, University of Massachusetts, Amherst, MA 01003. The University of Massachusetts is an equal opportunity employer.

Stanford University

Faculty Position in Atmospheric Transport and/or Air Quality Engineering

The Department of Civil Engineering at Stanford Uni-
versity is seeking a tenure-track Assistant Professor in
the field of atmospheric transport and/or air quality
engineering. The new professor will teach graduate
courses and conduct research in one or more of the
following areas: physical and chemical fundamen-
tals of air quality; atmospheric transport of contam-
inants, including regional and global effects; the
impact of air quality changes on human health and
the environment; and air pollution control. In re-
search, the candidate preferably should offer a bal-
ce of interest in experimental and computational
work, with emphasis on understanding the relevant
physical and chemical processes and their impacts.

The Department of Civil Engineering has 25 profes-
sors and approximately 225 graduate students and
60 undergraduate students. The new position offers
opportunity for interactions with strong existing pro-
gams in environmental engineering and science, hy-
drology and fluid mechanics, mechanical engi-
neering, biological sciences, chemistry, chemical
engineering and earth sciences.

The position is available as early as September 1,
1989. As an equal opportunity employer through
affirmative action, Stanford University especially
encourages applications from qualified women and
ethnic minorities. Applicants should send their
resume, publication list, and names of references as
soon as possible, but no later than 30 November
1988, to Professor Paul V. Roberts, Department of Civil
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94305-4020.

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Radian Corporation has opportunities for entry level
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PLEASE ATTACH RESUME

Dues are payable to the Association on a calendar year basis.
The AEEP annual dues payment, prorated according to the date of application, is shown below.

INITIAL DUES PAYMENT REQUIRED BASED ON RANK AND DATE OF APPLICATION

<table>
<thead>
<tr>
<th>RANK</th>
<th>1 Jan.</th>
<th>1 Apr.</th>
<th>1 July</th>
<th>1 Oct.</th>
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<tr>
<td>Professor</td>
<td>$50.00</td>
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<td>$10.00</td>
<td>$5.00</td>
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</table>

Please return this form along with your dues to:

Desmond E. Lliew
Department of Civil Engineering
University of Texas
Austin, TX 78712

Enclosed are my AEEP dues in the amount of: $ ____________

Signature ____________________________ Date ____________
ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS

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3 OCTOBER 1988
11:45 A.M.
HYATT REGENCY HOTEL, DALLAS
AT
REUNION GRAND BALLROOM

COST: $15.00

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CH2M Hill Award

Reservations are required. This is a sit down function. The hotel requires that the number of meals to
be served be guaranteed by 30 September 1988. Reserve your place today. Complete and return the
attached reservation form to (or call): Dr. Desmond F. Lawler, P.E., Civil Engineering Department, ECJ 8.6,
The University of Texas, Austin, Texas 78712; or 512/471-4205.

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3 OCTOBER 1988, DALLAS, TEXAS

Please reserve a place for me at the AEIP Anniversary Luncheon.
☐ My check, in the amount of $15.00 is enclosed.
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Desmond F. Lawler, P.E.
Civil Engineering Department
ECJ 8.6
The University of Texas
Austin, Texas 78712
Registration Application

Name: ____________________________
Address: __________________________

Registration Fee: AEEP member $95.00  
November $150.00

Please respond by November 1, 1988.

Make check payable to: CMU Department of Civil Engineering — AEEP Conference.

Return this portion of the registration form to:  Mrs. Marlene Leffard  
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