



## **PRESIDENT'S CORNER**

### **Research Directions in Environmental Engineering**

Preparations are well underway for the AEEP conference on "Fundamental Research Directions in Environmental Engineering". The conference will be held in Washington, DC, during November 13-15, 1988, for one and one-half days including an evening banquet and a welcoming reception. The objectives of the conference are to provide a structure for the development of long term research needs in environmental engineering and to stimulate discussion of these ideas among researchers, users and sponsors. The primary focus of the conference will be on comprehensive approaches to managing and controlling environmental problems using a multidisciplinary and multimedia perspective. The conference will address approaches to achieve timely implementation of environmental engineering/science research in order to help guide environmental control policy and assist with technology development. Physical, chemical and biological aspects of environmental problems will be discussed.

The conference organizing committee is comprised of Richard G. Luthy, Chairman; Charles R. O'Melia, Co-Chairman; James J. Morgan, Co-Chairman, the Executive Committee of the AEEP; and Francis A. DiGiano, Chairman of the 1982 Conference. The program will consist of four technical sessions: Physical Processes, John Seinfeld, Chairman; Chemical Processes, Phil Singer, Chairman; Biological Processes, Les Grady, Chairman; and Multiphase Systems, Perry McCarty, Chairman.

A proposal for support of the conference was accepted by the National Science Foundation. The Environmental Protection Agency Office of Environmental Engineering and Technology Demonstration has indicated a desire to provide some funds for support of the conference and a proposal is being submitted to the EPA for this purpose. Additional information regarding arrangements for the confer-

ence will be forthcoming this summer. Please mark your calendars now and reserve November 13-15 in Washington, DC, for this important AEEP event.

### **Executive Committee Meeting and Discussions on Research Funding**

The Annual Executive Committee Meeting of the AEEP was held in Washington, DC, on February 28 and 29. A day-long meeting was devoted to reviewing recent activities of the AEEP and taking care of various business matters. The AEEP officers and directors meet together only twice per year; thus the Executive Committee meeting deals with the activities of the AEEP in the interim. The Executive Committee is comprised of the President, Past President, Vice President, Secretary and Treasurer.

The second day of our meeting was devoted to meeting with the directors of the Environmental Protection Agency, Office of Environmental Engineering and Technology Demonstration, and Office of Exploratory Research. We also met with the council of the Subcommittee on Natural Resources, Agricultural Research and Environment, a congressional subcommittee which oversees, in part, EPA's environmental engineering R&D budget. Our purpose in meeting was to initiate a process whereby the AEEP may assist the EPA and Congress through the exchange of ideas on environmental engineering research. The AEEP can provide knowledgeable, constructive comments on matters ranging from new initiatives and directions to suggestions for management and execution of university research. Our agenda included: (i) the role of exploratory research, (ii) the advantages of individual investigator grants versus center grants, (iii) the peer-review process versus special appropriation, (iv) the need for both anticipatory research and short-term focused research, and (v) the identification of critical research directions. It was intended that these discussions would be the start of a process whereby our respective organizations may work together to attain

cost-effective research for the greatest environmental benefit.

The discussions were very encouraging and our comments were well-received. We emphasized the need for a more vigorous EPA environmental engineering research agenda, and we learned that the EPA intends to promote a greater role for investigator-initiated grants. We explained that this process achieves a dual benefit, one from the research itself and a second from the process of educating young practitioners. Peer-reviewed,

unsolicited proposal grant programs are the mainstay of university research and perhaps the most cost-efficient. On the whole, the greatest creativity and innovation is most likely to come from individual investigator grants. The political problem, of course, is that individual investigators are spread out all over the country and can't speak effectively with one voice. Perhaps this is an opportunity for the AEEP.

Richard G. Luthy  
President

## AEEP NEWS AND ANNOUNCEMENTS

### AEEP Award Rules

At the October 5, 1987, Board of Directors Meeting in Philadelphia, Pennsylvania, changes were made in the rules for the two AEEP awards. The revised rules are given below.

### Outstanding Paper

Nominators for the paper that has "withstood the test of time" should send to the Chair of the Awards Committee, Dr. James M. Symons, Department of Civil Engineering, University of Houston, Houston, Texas 77004, a letter, 2 pages maximum, giving the full reference and the reasons why this paper is considered a "landmark" and how it has influenced the practice of environmental engineering. Nominations cannot be made by the author or any of the co-authors of the paper. A call for nominations should be in the December issue of the *Newsletter*. Nominations are due April 1 of each calendar year.

The Committee Members will rank each paper from top (1) to bottom in numerical order. Any Committee Member who is an author or co-author on a nominated paper will refrain from voting on that paper. The paper with the lowest average score (based on the number of voters for each paper) will be selected. Ties will be re-balloted.

The Committee Chair will notify the selected author(s) and invite them to the AEEP lunch at the following WPCF Conference. The Committee Chair will prepare the award plaques.

Any author on a paper selected as "Outstanding" is ineligible in the competition for a period of three years.

Each year the papers ranked 2, 3, and 4 will automatically be considered in the next year's voting. A paper will be dropped from consideration if: (a) it finishes fifth or lower in any year, or (b) it has been in competition for three years without being selected.

After the WPCF Annual Conference each year the winning paper and the carry-over nominations will

be printed in the *Newsletter*. The winning paper for 1987 was:

Dick, R.I., and Ewing, B.B., "Evaluation of Activated Sludge Thickening Theories", *SED, ASCE*, **93**, SA-4, 9-29 (August, 1967). *Nominated 1986*.

The carryover nominations in alphabetical order were:

McKinney, R.E., "Mathematics of Complete-Mixing Activated Sludge", *SED, ASCE*, **88**, SA-3, 78-113 (May, 1962). *Nominated 1986*.

Keinath, M.D., Ryckman, M.D., Dana, C.H., and Hofer, D.A., "Activated Sludge — Unified Systems, Design, and Operation", *JEED, ASCE*, **103**, EE-5, 829-849 (October, 1977). *Nominated 1986*.

Sezgin, M., Jenkins, D., and Parker, D.S., "A Unified Theory of Filamentous Activated Sludge Bulking", *JWPCF*, **50**, 362-382 (February, 1978). *Nominated 1986*.

The Awards Committee is to consist of a voting Chair with a three year term and six members each with a rotating three year term. The Chair is to be appointed by the President of AEEP. The two new members are appointed each year by the Chair. Each term starts at the end of the Annual WPCF Conference. The current Committee is:

James M. Symons, Chair, term ends 1988  
Gary L. Amy, term ends 1988  
Stephen J. Randtke, term ends 1988  
Pery L. McCarty, term ends 1989  
Richard I. Dick, term ends 1989  
Vacant, term ends 1990  
Vacant, term ends 1990

### Dissertation Award

Two awards will be made for the 87-88 academic year, one sponsored by Engineering Science, Inc., one by CH2M-Hill Consulting Engineers. Each award will consist of a cash prize of \$1000 for the student and \$500 for the faculty advisor.

Faculty advisors wishing to compete should send four copies of the thesis to Mr. Nicholas L. Presecan, Senior Vice-President, Engineering Science, Inc., 75 North Fair Oaks Avenue, P.O. Box 7107, Pasadena, CA 91109. He will send a copy to the judges, the two most recent winning faculty advisors and one to CH2M-Hill Consulting Engineers.

The deadline for submission is June 15, 1988. Faculty advisors are urged to submit only one entry for each competition.

The two most recent winners were:

1986 — William W. Clarkson, "Fermentation of Particulate Organic Matter to Methane in a Thermophilic Anaerobic Attached Film Expanded Bed Reactor", William J. Jewell, Cornell University, Faculty Advisor.

1987 — David A. Dzombak, "Toward a Uniform Model for the Sorption of Inorganic Ions on Hydrated Oxides", Francois M. M. Morell, Massachusetts Institute of Technology, Faculty Advisor.

Each thesis will be judged on the basis of 100 points allocated as follows:

Scientific and Technological Validity of Research — 25

Originality of Research — 25

Contribution to Advancement of Environmental Engineering and Science — 40

Clarity of Presentation (Organization) — 10

The selections will be made by September 1, 1988, so that each sponsor can contact the winning student and faculty advisor, invite them to the AEEP luncheon at the WPCF meeting and can prepare to make the presentation.

These rules will be published in the December and April issue of the *Newsletter* each year the awards are to be given.

## **AEEP Purdue Workshop on Solid Waste Management**

**May 9, 1988**

The principal objective of this workshop is to present and discuss topics and material that can be used in the teaching of undergraduate and graduate courses on the management of municipal solid waste. With the exception of the hazardous materials found in municipal waste, the subject of hazardous waste disposal will not be considered in the workshop. The relationship between the properties of the waste, the techniques and hardware used for waste handling and processing, and the ultimate disposal (containment) of waste and other residual materials will be emphasized. Because of the significance of landfilling for the disposal of municipal wastes, special attention will be devoted to teaching techniques for important landfill processes including

the generation of landfill gases and leachate and the modeling of landfill gas movement and gas control systems. To the extent possible, the material on the landfill processes will be presented so that spreadsheet programs can be used for the purpose of analysis. Suggested course outlines and other reference materials suitable for class room use will be provided.

## **Speakers**

George Tchobanoglous — Professor of Civil Engineering, University of California at Davis, CA.

Larry Theisen — Vice President and Program Director — Solid Waste and Resource Recovery, Brown and Caldwell Consulting Engineers, Walnut Creek, CA.

Other Speakers — To Be Announced.

## **AEEP/AWWA Workshop**

**4:30 to 6:15 pm, Sunday, June 20th**

The title of this year's AEEP/AWWA program will be "Making Decisions in an Uncertain Regulatory Environment". Carol Tate, of Montgomery Engineers, will moderate the session and will address the topic from an engineering consultant's point-of-view. Michelle Frey, from the AWWA Governmental Affairs office, and Michael McGuire, with the Metropolitan Water District of Southern California, will address the subject from their respective professional viewpoints.

Please note the new time. Our traditional Monday night slot will be pre-empted by the AWWA Fun Night at Sea World. The location of the seminar will be published in the April edition of the Journal AWWA.

## **AEEP/WPCF Workshop**

**1:00 to 5:00 pm, Sunday, October 2nd**

Charles Eckert from the University of Illinois and Carl Lira from Michigan State University will present "Reactions and Extractions Using Supercritical Fluids". Prof. Eckert has published a feature article on this subject in *Environ. Sci. Technol.* 20(4):319 (1986). This is an emerging technology for the treatment of hazardous, industrial and perhaps conventional wastes. Plan to arrive early in Dallas in order to participate in this workshop.

## **Planning for Next Education Conference**

The AEEP Board invites proposals from universities and other organizations interested in hosting and co-sponsoring the Sixth Conference on Environmental Engineering Education. Traditionally, these conferences have been held during the summer at

five to seven year intervals at a university site. The Fifth Conference was held at Michigan Tech in July of 1986. This would make the summer of 1991 a good target for the Sixth Conference. The host institution should be selected two years in advance so that detailed planning for the Conference can proceed smoothly.

Informal proposals should be submitted to Dick Luthy, President, AEEP. Additional information relative to previous conferences can be obtained from Bob Baillod, Chairman AEEP Planning Committee, for the 1990's Education Conference (906-487-2530).

## 2nd Edition of Computer Software Manual

A second edition of the AEEP Computer Software Manual is planned. The first edition of this manual has become a valuable resource for demonstration and utility programs in environmental engineering courses. The success of the manual will depend largely on voluntary contributions. Programs on all aspects of environmental engineering are welcomed.

We are looking for micro-computer programs or developed spreadsheet templates to include in this second edition of the manual. Please contact J. B. Neethling for information.

J. B. Neethling  
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Los Angeles, CA 90024-1593  
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## Member Address Changes

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## Deadline for the September 1988 Newsletter

Please mail articles for the September issue of the AEEP *Newsletter* to the editor, G. D. Boardman, by July 15, 1988.

## GENERAL NEWS

### ASCE's Outstanding Civil Engineering Achievement Award (OCEA) Program

The American Society of Civil Engineers' (ASCE) annual Outstanding Civil Engineering Achievement Awards (OCEAs) are designated when "an engineering project demonstrates the greatest contribution to civil engineering progress and mankind". The projects are judged on the following criteria:

1. contribution to the well-being of people and communities,
2. resourcefulness in planning and in the solution of design problems,
3. pioneering in use of materials and methods,
4. innovation in construction,
5. impact on physical environment, unusual aspects and esthetic values,
6. possible adverse effects as well as the beneficial effects of the project.

The award is made annually for a project's achievement — not to an individual — to recognize the work and contributions of the many engineers who have worked on the project. Consisting of a plaque for permanent display, the award is presented to the owner of the project at a local ceremony.

Members of the ASCE Board of Direction nominate projects for the award, which are judged by a jury composed of editors of leading engineering magazines and knowledgeable representatives of public media, eminent civil engineers, and/or eminent members of the design profession. The editor of *Civil Engineering* magazine serves as chairman of the jury.

A recommendation by the jury is made to the Board which grants the OCEA award.

In addition to the winning project, the jury may select additional outstanding accomplishments for recognition by an "Award of Merit".

The OCEA program was established in 1960.

Among the projects nominated for 1988 were:

- Akron Composting Facility, Akron, OH

- Cove Road Slope Restoration, Dana Point, CA
- Danziger Vertical Lift Bridge, New Orleans, LA
- Franconia Notch Project, NH
- Great Salt Lake West Desert Pumping Project, UT
- I-285/I-85 Tom Moreland Interchange, Atlanta, GA
- Lakeshore Drive Reconstruction Project, Chicago, IL
- Los Angeles Aqueduct Filtration Plant, Los Angeles, CA
- Renton Treatment Plant Effluent Transfer System Outfall Project, Seattle, WA
- Southwest Corridor Project, Boston, MA
- Stage I Light Rail Transit Project of the Port Authority of Allegheny County, PA
- Sunshine Skyway Bridge Tampa, FL
- United Airlines Concourse B at Stapleton International Airport, Denver, CO

## Student Memberships in IAWPRC

The International Association on Water Pollution Research and Control (IAWPRC) has a graduate student membership classification that costs only \$25 per year. Since this enables them to receive subscriptions to both *Water Research* and *Water Quality International*, many may wish to avail themselves of this inexpensive opportunity to begin building their personal professional library. It is requested that environmental engineering faculty make this known to their graduate student body, and encourage them to join IAWPRC. An appropriate number of application blanks can be obtained by contacting Prof. T. M. Keinath either by mail (Department of Environmental Systems Engineering; Clemson University; Clemson, SC 29634-0919), BITNET electronic mail (KEINATH@CLEMSON), or telephone (803/656-5572).

## Annual American Institute of Chemical Engineers (AIChE) Environmental Division Student Award

### Call for Papers

- 1st Place — \$300.00
- 2nd Place — \$200.00
- 3rd Place — \$100.00

With certificates and awards presented at the Summer National AIChE Meeting to be held in Denver, Colorado, on August 21-24, 1988.

Contest entry rules:

1. First paper (i.e., unpublished work)
2. Research or investigation related to an environmental topic
3. Full-time undergraduate student in an accredited program

4. Student must be a member of the student chapter of AIChE

Submit manuscript with cover letter by May 14, 1988, to the Second Vice-Chairman of the Environmental Division:

Dr. Robert W. Peters, Ph.D., P.E.  
 Environmental Systems Engineer  
 Energy and Environmental Systems Division  
 Building No. 362  
 Argonne National Laboratory  
 9700 South Cass Avenue  
 Argonne, IL 60439-4815  
 ☎ (312) 972-7773

## New IIE Guides Offer Information on Opportunities to Study Abroad

IIE's *Vacation Study Abroad 1988, Academic Year Abroad 1988/89* and *Study in the United Kingdom and Ireland 1988/89* provide up-to-date information on opportunities available worldwide to U.S. students, educators and adults who want to combine travel and learning overseas. The books are published by the Institute of International Education (IIE).

The IIE guides identify topics for international study that range from wildlife in Kenya to urban planning in Japan, and include hundreds of fields of study. Many study-abroad programs now have a career development focus, including opportunities in multinational business, international law, health care administration, education and child development, and arts training that ranges from cinematography to master classes in music.

China and Japan are areas of growing interest for study abroad, although some 75 percent of all programs described in the IIE guides are located in Europe. The United Kingdom is the most popular destination for international study by Americans, and is the focus of IIE's newest guide, *Study in the United Kingdom and Ireland*.

*Vacation Study Abroad 1988* (\$19.95), *Academic Year Abroad 1988/89* (\$19.95), and *Study in the United Kingdom and Ireland 1988/89* (\$14.95) are available prepaid by check or money order from the Publications Service, Institute of International Education, 809 United Nations Plaza, New York, NY 10017.

## America's Water Dilemma to be Focus of New ASCE Newsletter

Where our nation's water is, who controls it, and who wants it will be examined in *Water Rights*, an American Society of Civil Engineers (ASCE) monthly newsletter which premiered in January.

*Water Rights* will address:

- the steps Michigan is taking to keep outsiders from diverting water from the Great Lakes;

- the law suit Kansas has filed against Colorado on the grounds that it has illegally held back the flow of the Arkansas River;
- a water rights dispute between Nebraska and Wyoming that will be heard by the United States Supreme Court; and,
- the reasons why Bethlehem Steel, Chevron and some of the country's other large industrial companies have coalesced with environmentalists to fight a Delaware River water management plan.

In addition, *Water Rights* will explain the role the U.S. Bureau of Reclamation, Environmental Protection Agency, U.S. Army Corps of Engineers, Department of Agriculture, U.S. Geological Survey and dozens of state agencies play in water rights disputes.

The annual subscription rate is \$95. To order, send a check to: Water Rights, Department 880W, ASCE, 345 East 47th Street, New York, NY 10017. To charge your subscription to VISA, Mastercard or American Express, call 1-800-548-ASCE. (In New York call 1-800-628-0041.)

## PERSONAL ACCOMPLISHMENTS

### Joe J. King Award at UT Austin

**Joseph F. Malina** is the recipient of the Joe J. King Professional Engineering Achievement Award for 1988. The Award was established in 1976 at the University of Texas at Austin to recognize their College of Engineering faculty who have shown exemplary leadership in the engineering profession.

Faculty of the College of Engineering with the rank of assistant professor and above may be considered for the award. Excellence in teaching and research is also considered in the selection process.

Nominations may be made by any member of the engineering faculty and by members of the practicing engineering profession. They are reviewed by a committee consisting of the executive director of the State Board of Registration for Professional Engineers, the immediate past recipient of the award, the president of the Texas Society of Professional Engineers, and a representative of one of the five founder societies (AIChE, AIME, ASCE, ASME and IEEE).

Joseph F. Malina, Jr., P.E., is the C. W. Cook Professor in Environmental Engineering at The University of Texas at Austin, where he has been chairman of the Department of Civil Engineering since 1976. He is a native of Brooklyn, New York, and came to The University of Texas at Austin in January 1961.

Dr. Malina has published more than 150 technical articles, reports, manuals, book chapters, and books dealing with water treatment and environmental pollution control. He holds a Bachelor of Civil Engineering degree with emphasis on sanitary engineering from Manhattan College in Riverdale, New York, and earned his master's and doctoral degrees in civil engineering at the University of Wisconsin at Madison.

He is married to the former Ida Marie Klein of Tomball, Texas. They have five children: Kristyn, Joseph, Alexander, Mary, Alexandra, and Frances.

### Academy of Environmental Engineers Names Officers

Dr. **Paul L. Busch**, P.E., was installed as President and Dr. **N. Bruce Hanes**, P.E., was installed as President-Elect for 1987-88 at the Annual Meeting of the American Academy of Environmental Engineers held November 1 to 3, 1987, in Alexandria, Virginia.

Dr. Busch has been employed by Malcolm Pirnie, Inc. since 1961 and is presently Executive Vice President for Engineering and Technical Services. In his engineering practice, he has concentrated on treatment facilities, water reuse, water quality, resource recovery and toxic materials.

Dr. Hanes is a Professor at Tufts University. A graduate of North Dakota State and Wisconsin Universities, Dr. Hanes practiced environmental engineering with the Sewer Division of the City of Milwaukee before entering academia. He has served as professor at the University of Wisconsin, and Montana State College before going to Tufts University in Boston.

Also elected for a one year term as Vice President was **David M. Benforado**, P.E.

Mr. Benforado has been employed by 3M since 1969 and is presently a Senior Environmental Specialist in the Environmental Engineering & Pollution Control Division. He represents 3M on key business associations such as The Business Roundtable, Environment Task Force Staff Services Committee.

The American Academy of Environmental Engineers is a specialty certification board for environmental engineers that is dedicated to improving the quality of environmental engineering practice.

### ISRI Announces Officers

At the first National Convention of the Institute of Scrap Recycling Industries, Inc. (ISRI), held January 13-16 in Los Angeles, **Richard E. Abrams**, president of B. Abrams & Sons Inc., Harrisburg, PA, was elected

President of the trade association by its Board of Directors.

Mr. Abrams has been an active civic leader in Harrisburg. He is a member of the Board of Directors of Pennsylvanians for Effective Government.

He is presently serving as Treasurer, as well as a member of the Board, of the Samuel L. Abrams Foundation, a fund that provides grants and non-interest bearing loans to worthy and needy students seeking undergraduate and graduate education.

Mr. Abrams received his Bachelor of Science degree in Economics from the Wharton School at the University of Pennsylvania in 1966.

**David Serls** was elected by the ISRI Board of Directors to serve as its First Vice President for a two-year term.

Mr. Serls is the President and Chief Executive Officer of Colonial Metals Co., located in Columbia, PA, a firm he joined in 1957. He is also President of Columbia Reduction Co., a subsidiary of Colonial Metals Co., and President of L. Lavetan & Sons, Inc., York, PA. He is presently a member of the Board of Directors of the York Bank & Trust Co., a Midlantic Bank.

**Arnold G. Gachman** was elected Second Vice President of the trade association. Mr. Gachman has been President of Gachman Metals of Fort Worth, TX, since 1974.

Gachman, who attended both the University of Texas and Texas Christian University, earned his B.B.A. in Fi-

ancial Management and Economics at TCU in 1964.

He remains a very active civic participant, serving as Commissioner and Chair of the City of Fort Worth Human Relations Commission and as the past Director of Fort Worth-Tarrant County Cancer Society and as Chairman of the National Kidney Foundation Charity Tennis Tournament. Gachman is a Director of Fidelity National Bank and Chair of the Loan Committee.

**James A. Fisher**, President of Fisher Steel and Supply Company, was elected by ISRI to serve as Secretary.

Fisher joined the family business, which processes, smelts and brokers both ferrous and nonferrous scrap, in 1975. Previously, he had completed his B.A. degree at the University of Michigan in 1969, and his M.B.A. at Harvard Business School in 1971.

**David S. Grossman** was elected to serve as the new ISRI Treasurer.

Mr. Grossman is the President and Chief Operating Officer of Grossman Iron and Steel Co. in St. Louis, a family owned business that he began working in more than 18 years ago.

After completing his B.A. at Yale in 1974, "Cap" joined the family iron and steel business and began working his way up the ladder.

The Institute of Scrap Recycling Industries, Inc. represents 1800 member companies that are processors, brokers and consumers of scrap commodities — ferrous and nonferrous metals, paper, plastics, and textiles, and suppliers of equipment and services to the industry.

## CONFERENCES AND EDUCATIONAL PROGRAMS

### Call for Abstracts: "Microbial Aspects of Surface Water Quality"

The Water Pollution Control Federation will be sponsoring a specialty conference on "Microbial Aspects of Surface Water Quality" to be held in Chicago May 30-June 2, 1989. The conference topics will include the presence and discharge of microorganisms of health concern in effluents, effects and fate of microorganisms in the surface water environment, impacts on drinking water treatment, and engineering control methods. Papers are solicited for presentation at this conference on field or laboratory investigations related to the topic of the conference.

For consideration, abstracts of 200-500 words should be submitted (5 copies) to Dr. Charles N. Haas, Pritzker Department of Environmental Engineering, Illinois Institute of Technology, Chicago, IL 60616 by August 1, 1988.

### Announcement of IAWPRC Conferences, Specialty Conferences and Workshops

The schedule for upcoming conferences sponsored by the International Association on Water Pollution Research and Control (IAWPRC) is given below.

#### 5th International Symposium on Anaerobic Digestion

22-26 May 1988, Bologna, Italy

Contact: Secretariat, 5th International Symposium on Anaerobic Digestion, Sogepaco SpA, Piazza della Costituzione 4, 40128 Bologna, Italy.

#### Alternative Waste Treatment Systems

26-27 May 1988, Palmerston North, New Zealand

Contact: Prof. R. L. Earle, Biotechnology Department, Massey University, Palmerston North, New Zealand.

## **Water Quality and Management for Recreation and Tourism**

10-15 July 1988, Brisbane, Australia

Contact: Dr. R. Sadler, Conference Secretary, P.O. Box 388, North Quay, Brisbane 4000, Australia.

## **14th IAWPRC Biennial International Conference on Water Pollution Research and Control — "Confluence 88"**

17-23 July 1988, Brighton, UK

Contact: IAWPRC, 1 Queen Anne's Gate, London SW1H 9BT, UK.

## **Statistical Methods for the Assessment of Point Source Pollution**

19-21 September 1988, Burlington, Ontario, Canada

Contact: Mr. D. Chapman, Wastewater Technology Centre, Canada Centre for Inland Waters, 867 Lakeshore Road, P.O. Box 5050, Burlington, Ontario L7R 4A6, Canada.

## **2nd IAWPRC Asian Conference on Water Pollution Control in Developing Countries**

9-11 November 1988, Bangkok, Thailand

Contact: Dr. Thongchai Panswad, Thai Environmental Engineers Association, Faculty of Engineering, Chulalongkorn University, Bangkok 10500, Thailand.

## **Technological Advances in Biofilm Reactors**

4-6 April 1989, Nice, France

Contact: Dr. M. Florentz, SETUDE, 2 rue Pasquier, 75008 Paris, France.

## **Treatment, Disposal and Management of Wastewaters in the Coal Mining Industry**

15-19 June 1989, Warsaw, Poland

Contact: Dr. M. Gromiec, Institute of Meteorology and Water Management, Uli-Podlesna 61, 01-673 Warsaw, Poland.

## **Design and Operation of Small Wastewater Treatment Plants**

26-29 June 1989, Trondheim, Norway

Contact: Dr. P. Odegaard, Institute for Vassbygging, JNIT/NTH Klæbuveien 153, N-7034 Trondheim-NTH, Norway.

## **5th IAWPRC River Basin Management Conference**

August 1989, Rovaniemi, Finland

Contact: Prof. S. Mustonen, National Board of Waters, PB 250, SF-00100, Helsinki 10, Finland.

## **Upgrading Wastewater Treatment Plants**

August/September 1989, Munich, FRG

Contact: Dr. C-H Plumer, EWPCA, Markt 71, D-5205 Sankt Augustin 1, Federal Republic of Germany.

## **Water Management Problems in Agro-Industries**

28-30 September 1989, Istanbul, Turkey

Contact: Prof. D. Orhan, Environmental Sciences Division, Technical University of Istanbul, IIIU Insaat Fakultesi, Cevre Muhendisligi Bolumu, Besiktas, Macka, Istanbul, Turkey.

## **Current Practice and Design Criteria for Runoff Water Quality Control**

The Engineering Foundation, in cooperation with the ASCE Urban Water Resources Research Council and the U.S. Environmental Protection Administration, is sponsoring a conference on "Current Practice and Design Criteria for Runoff Water Quality Control" to be held July 10-15, 1988 at Trout Lodge, Potosi, Missouri. Conference Chairman is Larry A. Roesner, Camp Dresser & McKee, Inc.; Co-Chairman is Ben Urbonas, Urban Drainage and Flood Control District 69 (Denver).

Sessions are anticipated on the following subjects:

- Water Quality Basic Issues
- Pollution Control Approaches
- Detention and Retention
- Infiltration and Percolation
- Institutional Issues
- Retrofit Devices in Densely Urbanized Areas
- Runoff Control at Source
- Wetlands-Storm Water Treatment
- Research Needs

The proceedings are scheduled to be published by ASCE.

Conference fees, including registration, meals, accommodations, taxes and gratuities are as follows:

Participant (single occupancy) — \$575.00

Participant (double occupancy, sharing room with spouse, other family member, participant, etc.) — \$460.00

Guest (spouse, etc. not attending sessions, double occupancy including meals and accommodations) — \$290.00

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

## **American Society of Civil Engineers Announces Upcoming Conventions and Specialty Conferences**

The American Society of Civil Engineers (ASCE) has announced the following schedule for future conventions and specialty conferences.

Commencing in 1989, ASCE will be holding one convention annually.

The convention schedule is as follows:

May 9-11, 1988, Nashville, TN, Opryland Hotel

October 23-27, 1988, St. Louis, MO, Sheraton St. Louis and Convention Center

October 1989, San Francisco, CA



October 28-November 1, 1990, New Orleans, LA,  
Hyatt Regency Hotel

October 1991, Orlando, FL

October 1992, New York, NY

For convention information contact:

ASCE Conventions & Exhibits Department  
345 East 47th Street  
New York, NY 10017  
☎ (212) 705-7543

The schedule for specialty conferences is as follows:

May 2-5, 1988, "Offshore Technology Conference", Waterway, Port, Coastal and Ocean Division, Houston, TX

June 6-8, 1988, "Pipeline Infrastructure", Pipeline Division, Boston, MA, Westin Copley Plaza

June 26-30, 1988, "3rd Water Resources Operations and Management Workshop", Water Resources Planning and Management Division, Fort Collins, CO

July 13-15, 1988, "Joint CSCE (Canadian Society for Civil Engineering)-ASCE International Conference on Environmental Engineering", Environmental Engineering Division, Vancouver, BC, Canada

July 18-21, 1988, "1988 National Conference on Irrigation and Drainage Engineering", Irrigation and Drainage Division, Lincoln, NE, The Cornhusker

August 8-10, 1988, "1988 National Conference on Hydraulic Engineering", Hydraulics Division, Colorado Springs, CO, Clarion Hotel

August 21-26, 1988, "International Conference on Groundwater", Irrigation and Drainage Division/Artificial Recharge, Anaheim, CA, Inn at the Park Hotel

August 29-30, 1988, "Planning Aspects of Hazardous Facilities", Urban Planning & Development Division, Atlanta, GA

For further information on specialty conferences, contact:

ASCE Specialty Conference Dept.  
345 East 47th Street  
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## IWEM Conferences and Symposia

The Institution of Water and Environmental Management (IWEM) has announced the following programme of conferences and symposia.

### 1988

20 April, University of Essex, Symposium: Nitrates.

27 April, London, Symposium: Catchment quality control.

11 July, London, Symposium: Streetworks — getting the act together.

27-29 September, Eastbourne, IWEM '88: Maintaining a balance in water and environmental management. Conference and Exhibition.

### 1989

March, Second Annual Symposium.

11-14 September, Birmingham, IWEM '89: Conference and Exhibition.

### 1990

March, Manchester, Third Annual Symposium.

10-13 September, Glasgow, IWEM '90: Conference and Exhibition.

Detailed information has been distributed on the symposium to be held in London from 23-24 March 1988 on 'Risk management in water and environmental services'. Detailed information on all the other events will be issued as soon as it is available.

Copies of programmes with registration forms may be obtained from Mrs. Lavinia Gittins, IWEM, London (☎ 01-430-0899 or 0949).

## EMPLOYMENT OPPORTUNITIES

### State University of New York at Buffalo

#### Department of Civil Engineering

The Department of Civil Engineering at SUNY-Buffalo invites applications for tenure-track positions in the area of Environmental Engineering. Applicants must have a Ph.D. and be interested in contributing to both the graduate and undergraduate programs of

the Department. All applicants are expected to develop funded research programs in their areas of interest. Salary and related incentives will be commensurate with the qualifications of the applicant.

Specific information for the positions is as follows:

**Assistant Professor:** Applicants are expected to develop an active research program in the areas of environmental chemistry and hazardous waste

treatment and teach related courses at the graduate and undergraduate levels.

*The New York State Center for Hazardous Waste Management* has been established at the State University of New York at Buffalo to develop research, information transfer and service in hazardous waste management. Successful candidates will be expected to participate in the Center's activities and work with six other faculty in the Department in the area of Water Resources and Environmental Engineering. The Department currently has a total of 23 faculty members, 100 graduate students, and 106 juniors and seniors.

Send resumes and names/addresses of at least three references to:

Dale D. Meredith, Professor and Chairman  
Department of Civil Engineering  
State University of New York at Buffalo  
Ketter Hall  
Buffalo, New York 14260

*The State University of New York at Buffalo is an Equal Opportunity/Affirmative Action Employer*

SUNY at Buffalo encourages applications from qualified women and ethnic minorities. Proof of U.S. citizenship or eligibility for U.S. employment will be required prior to employment (Immigration and Control Act of 1986).

## Cornell University

### Department of Agricultural Engineering

**Research Associate in the Area of Environmental Quality Engineering:** The person in this Research Associate position should have a Ph.D. or equivalent experience in agricultural engineering or a related discipline such as environmental engineering or biochemical engineering. This individual is the key research manager and coordinator on a project to develop an engineering basis for terrestrial biomass energy production systems in cooperation with a nation-wide team working with support from the Gas Research Institute. The individual in this position will work with Dr. William J. Jewell and other experts in coordinating the wide range of grant activities that will be pursued in this study. He or she will provide a critical communication link between the University administration and the research staff on this project as well as assist in planning and carrying out all experiments. Communication with other research groups and identification of information exchange mechanisms will also be determined with assistance from this Research Associate.

Much of the on-going research is fundamental research of the anaerobic methane fermentation process. The person will be expected to provide leadership in defining solid-state fermentation designs and evaluating the potential of new and creative fermentation schemes. Schemes to be studied

include digestion of wood, *in situ* gas purification, and hydrolysis reactions.

The Research Associate will manage and monitor all phases of the research, provide assistance in communication of progress and problems to all members of this project, prepare drafts of monthly and quarterly economic and technical progress reports and other data summaries. This person will play a major role in preparing information displays and escorting visitors to the project, and will make contact with other groups. All phases of the project will involve the Research Associate, from planning to execution, analysis and write-up, and presentation of the results.

It is anticipated that this person will spend half of the time in management and coordination activities and the balance between new process development, data evaluation, and experimental design and definition of anaerobic digestion of solid substances.

Further information may be obtained by contacting William J. Jewell at 607/255-4533 or Gerald E. Rehkugler at 607/255-2270.

## Penn State Harrisburg

### Environmental Engineering Technology & Environmental Pollution Control

Applications are invited for a tenure-track faculty position at Penn State Harrisburg starting in August 1988. Rank dependent on qualifications with Ph.D. preferred; P.E. highly desirable. Assignments will include teaching at the graduate level in a masters program in environmental pollution control and a masters program in engineering; and at the junior/senior year level in a Bachelor of Science in engineering technology program. Courses may include environmental microbiology and chemistry, treatment plant design, fluid mechanics, hydrology, and hydraulic structure design. Successful candidate will be required to advise graduate and undergraduate students and to chair masters' committees.

Penn State Harrisburg is the only senior college and graduate center of the University's 22 campus system. Enrollment includes 3,100 junior, senior and graduate students. In addition to Science, Engineering and Technology, academic divisions at this high quality and innovative College include Behavioral Science and Education; Business Administration; Heindel Library; Humanities; and Public Affairs. Located eight miles from the State Capitol, the 218-acre campus is easily accessible to Philadelphia, Baltimore, Washington, D.C., and New York.

Apply to Dr. William A. Welsh, Jr., Head, Division of Science, Engineering and Technology, c/o Robert Hamill, Box AWW, Penn State Harrisburg, Middletown, PA 17057. Closing date: January 30, 1988 or until position is filled.

An Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

## Purdue University

### Faculty Position in Environmental Engineering

Purdue University's School of Civil Engineering is now accepting applications for a tenure-track faculty position within its environmental engineering area. Prospective candidates should have a Ph.D. with emphasis in the chemistry and treatment of hazardous waste, wastewater, and groundwater. The selected applicant will be expected to teach both undergraduate and graduate level courses, as well as to develop externally sponsored research.

**Rank** Assistant or Associate Professor

**Start** 15 August 1988

**Contact** Professor H.L. Michael  
School of Civil Engineering  
Purdue University  
West Lafayette, IN 47907

**References** Provide 3 recommendation names and addresses.

*Purdue University is an Equal Employment Affirmative Action Employer.*

## Montana State University

### Department of Civil and Agricultural Engineering

Montana State University Department of Civil and Agricultural Engineering invites applications for a tenure track position in Environmental Engineering at the assistant professor level. The initial appointment will be at 50% teaching within the Environmental Engineering program and 50% research within the Institute for Biological and Chemical Process Analysis (IPA), a research institute within the College of Engineering.

Teaching emphasis will be on graduate courses in the fundamentals of environmental engineering and water and wastewater treatment process design. The candidate's academic background should be strong in these areas. Research emphasis within IPA may initially be dictated by ongoing IPA projects, but the candidate will be expected to develop his/her own externally funded research program.

Minimum qualifications include a Ph.D. in Environmental Engineering or a closely related field. An undergraduate degree in Civil Engineering or Chemical Engineering is highly desirable, as is experience in teaching, research and/or design. A statement of interest with a current resume and at least three letters or recommendation should be sent to: Dr. Howard S. Peavy, Dept. of Civil and Ag.

Eng., Montana State University, Bozeman, Montana 59717, (406) 994-6690. Review of applications will begin on April 1, 1988 and will continue until the position is filled. *M.S.U. is an equal opportunity, affirmative action institution; applications from minorities and women are encouraged.*

## University of Michigan

### Faculty Position in Environmental Engineering

The Department of Civil Engineering at The University of Michigan invites applications for a tenure-track faculty position in Environmental Engineering. Duties include active participation in sponsored research, in all facets of graduate education, and in undergraduate teaching. A strong academic background and demonstrated capability in biological process engineering is required. Salary and rank will be commensurate with qualifications. Applicants for associate and full professor must have established records in research publications and funding.

Send resume and letter of application to:

Professor Walter J. Weber, Jr.  
Search Committee Chair  
Department of Civil Engineering  
The University of Michigan  
Ann Arbor, MI 48109-2125

*An Equal/Affirmative Action Employer.*

## Polytechnic University

### Department of Civil and Environmental Engineering

Polytechnic University invites applications for two tenure track positions starting September, 1988. Desirable credentials for the position in **Environmental Engineering** include bachelor's degree in engineering, doctorate in civil or environmental engineering and strong background in hazardous/toxic waste studies or other environmental specialty with good potential for sponsored research. Knowledge of laboratory development and operation an asset. Desirable credentials for the position in **Water Resources and Hydraulic Engineering** include bachelor's degree in civil engineering, doctorate in civil engineering, and strong background in groundwater studies or other specialty area in water resources and hydraulic engineering with good potential for sponsored research. Appointments are normally at the Assistant Professor level but higher ranks may be considered. Resumes, including lists of graduate courses taken, should be sent to Head, Civil & Environmental Engineering Dept., Polytechnic University, 333 Jay St., Brooklyn, NY 11201. *Polytechnic University is an Affirmative Action/Equal Opportunity Employer.*

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Association Of Environmental Engineering Professors

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