



Association Of
Environmental
Engineering
Professors

NEWSLETTER

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PRESIDENT'S CORNER

Reality! The reality of Capital Hill is that research and education in Environmental Engineering are not pressing issues. In fact, they are virtually nonexistent. It's no wonder that budget reconciliation cut EPA's budget for exploratory research by \$7 million, which essentially eliminated exploratory grants for this fiscal year.

On January 28, Past President Tom Keinath, Vice President Bob Baillod, and I visited key staff for House and Senate committees, as well as leaders at EPA. We heard the same eye-opening stories in all quarters. Here are two examples.

- EPA's budget for exploratory research was slashed to nearly zero by committee staffers during marathon, all-night meetings during budget reconciliation. The exploratory-research budget was cut solely because a computer print-out showed that it was slated to receive a significant percentage increase. These staffers had no idea of the role or benefits of exploratory research nor of EPA's long-term, systematic plan (strongly supported by AEEP) to increase research funding. EPA research was just another line on the print-out: It stuck out and was cut off.

- Congress recently passed the National Environmental Education Act, which authorizes significant funding to enhance the general public's awareness of the environment and the educational skills of our nation's teachers. These are valuable goals that deserve our applause. However, Congress did not realize that a better educated public will demand even more environmental protection and clean-up, but the technical workforce in environmental engineering already is overtaxed. Most Congressional staffers were surprised to learn what we now

take for being obvious: The supply of environmental engineers meets only a small fraction of the demand. Unfortunately, the National Environmental Education Act has no provisions for education of environmental engineers.

Despite strong support for environmental improvement among the citizens and the Congress of the United States, precious few resources are being applied to two areas most likely to effect real improvements: research and education in environmental engineering. The long-lasting reason that research and education are not supported is that they have no constituency. While AEEP's continually expanding efforts to support EPA's budget have been helpful, they cannot compete with the organized pressure brought to bear by the military veterans, retired persons, Native Americans, and other high-profile groups with whom environmental education and research compete. Even the environmentalists act more as competitors than as allies in most cases.

Reality! We will fail ourselves and the nation unless we find a way to greatly expand environmental engineering research and education. To bring about major increases in research and education, we must stop being naive and start being organized. Political support must come from beyond our small organization: 500 professors are not going to shake the socks off many Congressmen. However, coordinated support from academia, industry, consultants, manufacturers, and environmentalists can be effective. AEEP should be the leader. You will hear more.

Bruce E. Rittmann
President

AEEP NEWS AND ANNOUNCEMENTS

Sixth Conference on Environmental Education Oregon State University, August 18-20, 1991

The Sixth Conference on Environmental Education will be held at Oregon State University on August 18-20, 1991 in Corvallis, OR. Place the dates on your calendar and plan to attend. In addition to an exciting professional program, an extensive social and recreation program to involve both yourselves and your families is planned.

Corvallis is located within the beautiful Willamette Valley and is within one-hour drive of either the gorgeous Pacific coast or the scenic Cascade mountains. Trips to both will be planned including hiking, rafting, canoeing, and sightseeing.

The professional program of the Conference will address the following focal issues:

- Development of Baccalaureate Environmental Engineering Programs and Degrees
- Inclusion of Hazardous Waste Topics in Curricula including Innovative Technologies
- Future Concerns in Graduate Environmental Engineering Education

Each position paper will discuss:

The Current Situation
Present and Future Education and Research
Needs
Approaches to Meeting the Needs
Conclusions and Recommendations

Conference registrants will receive copies of the position papers at least one month prior to the conference.

Overview of "Environmental Engineering Education of the Year 2000"

The future direction for environmental engineering education will be discussed from the perspective of academia, practitioners, and the public. Nationally known speakers will address the conference with keynote lectures from each of these perspectives.

Innovative teaching

A poster session will allow any participant to share innovative teaching approaches and methodologies used in environmental engineering education. Faculty can demonstrate computer programs and other new teaching approaches. A book fair marketing teaching aides will be ongoing. The EPA will have a booth to describe the innovative technology program and to demonstrate the use of the ATTIC database system.

Conference Program

Sunday, August 18th

1:00 pm: Opening and Welcome
"History of Environmental Engineering Conferences"

Perry L. McCarty, Stanford University

Keynote Addresses:

“Environmental Engineering Education in the Year 2000 - What is Needed?”

Academic Perspective:

Walt Weber Jr.
University of Michigan

Practitioner Perspective:

H. Gerald Schwartz, Jr.
Vice President
Sverdrup Corporation

Public Perspective:

Denis Hayes
Founder of Earth Day 1970 & 1990
Green Seal, Palo Alto, CA

Open Discussion: Resource Panel

4:00 pm: Social Hour sponsored by CH2M-Hill

5:30 pm: Barbecue

Monday, August 19th

9:00 am: Position Paper Summaries

Development of Baccalaureate Environmental Engineering Programs and Degrees, C. Robert Baillod, Michigan Technological University and William C. Boyle, University of Wisconsin

Discussion

Inclusion of Hazardous Waste Topics in Curricula including Innovative Technologies, John Ferguson, University of Washington

Discussion

Future Concerns in Environmental Engineering Graduate Education, Richard G. Luthy, Carnegie Mellon University

12:00 noon: Luncheon

1:00 pm: Concurrent Forums on Focal Issues with Speakers

•Development of Baccalaureate Environmental Engineering Programs and Degrees
C. Robert Baillod, Michigan Tech University
William C. Boyle, University of Wisconsin
Richard Dague, Iowa State University
Robin Autenrieth, Texas A&M University
George Tchobanoglous, University of California-Davis

- current situation
- requirements for competence and demand for graduates
- advantages and disadvantages of various approaches
- accreditation issues
- curricular alternatives

•Inclusion of Hazardous Waste Topic In Curricula including Innovative Technologies
“The One Course in Hazardous Wastes”
F. Michael Saunders, Georgia Tech University

“The Expanded Hazardous Waste Curriculum”
Thomas M. Keinath, Clemson University

“Hazardous Waste Education for the Consulting Engineering Profession”
Greg Peterson, Director of Technology Transfer, CH2M-Hill

“Education to Promote the Use of Innovative Technologies”
Walter Kovalick, Jr., Director, Technology Innovation Office, EPA

•Future Concerns in Graduate Environmental Engineering Education

“Philosophy of Graduate Education”
Desmond F. Lawler, University of Texas at Austin

“Graduate Education for Versatility and Perspective”
Charles R. O’Melia, John Hopkins University

“Programmatic Issues on Research and Graduate Education”

James R. Hunt, University of California-Berkeley

“Relations between Practitioners and Graduate Education”

Fred G. Pohland, University of Pittsburgh

“Environmental Engineering and Society”

David A. Bella, Oregon State University

4:00 pm: Development of Refined Position Statement for Consideration at Plenary Session

5:00 pm: Banquet

7:00 pm: Poster Sessions

Tuesday, August 19th

8:00 am: Plenary Session for Presentation of Work Group Reports and Refined Position Statements

12:00 noon: Luncheon

1:00 pm: Plenary Session

Summary Addresses: “Environmental Engineering Education in the Year 2000 - Summary Observations of Conference”

Academic Perspective:

Walt Weber, Jr.

University of Michigan

Practitioner Perspective:

H. Gerald Schwartz, Jr.

Vice President

Sverdrup Corporation

Public Perspective:

Denis Hayes

Founder of Earth Day 1970 & 1990

Green Seal, Palo Alto, CA

For more information contact:

Dr. Kenneth J. Williamson

Department of Civil Engineering

Oregon State University

Corvallis, OR 97330

AEEP Outstanding Paper Award

Nominations are sought for the 1990 AEEP Outstanding Paper Award for a paper that has “withstood the test of time”. Nominators should send a copy of the paper and a letter (two pages maximum) to Steve Randtke (Civil Engrg. Dept., U. of Kansas, Lawrence, KS 66045). The letter should give the full citation, the reasons why the paper is considered a “landmark”, and a description of the influence the paper has had on environmental engineering practice. A nomination cannot be made by an author or co-author of the paper. Nominations are due July 15th.

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. The previous winners were:

1983 - Stumm, W., and J.J. Morgan, “Chemical Aspects of Coagulation,” *Jour. Amer. Water Works Assn.*, August, 1962.

1984 - Stumm, W., and C.R. O’Melia, “Stoichiometry of Coagulation,” *Jour. Amer. Water Works Assn.*, May, 1968

1985 - McCarty, P.L., and A.W. Lawrence, “Unified Basis for Biological Treatment Design and Operation,” *J. San Engrg. Div., ASCE*, June, 1970.

1986 - Dick, R.I., “Role of Activated Sludge Final Settling Tanks,” *J. San. Engrg. Div., ASCE*, April, 1970.

1987 - Dick, R.I., and B.B. Ewing, “Evaluation of Activated Sludge Thickening Theories,” *J. San. Engrg. Div., ASCE*, August, 1967.

1988 - McCarty, P.L., “Anaerobic Waste Treatment Fundamentals,” *Public Works*, September-December, 1964.

1989 - Weber, W.J., Jr., and J. Carrell Morris, “Kinetics of Adsorption on Carbon from Solution” and “Equilibria and Capacities for Adsorption on Carbon,” *J. San. Engrg. Div., ASCE*, April 1963 and June 1964.

1990 - O’Connor, Donald J., “Oxygen Balance of an

Estuary," *Jour. San. Engrg. Div., ASCE*, 86, SA3, May 1960.

Each year the papers ranked two through five are automatically considered in the next year's voting. A paper is 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. The carryover nominations for this year's competition are:

- Cleasby, J.L., and E.R. Baumann, "Selection of Sand Filtration Rates," *Jour. Amer. Water Works Assn.*, 54, 579 (1962); and Cleasby, J.L., M.M. Williamson, and E.R. Baumann, "Effect of Filtration Rate Changes on Quality," *Jour. Amer. Water Works Assn.*, 55, 869-880 (1963). (Nominated 1989)
- Sezgin, M., D. Jenkins, and D.S. Parker, "A Unified Theory of Filamentous Activated Sludge Bulking," *Jour. Water Poll. Cont. Fed.*, 50, 2, 362-282 (Feb., 1978).
- Yao, K.M., M.T. Habibian, and C.R. O'Melia, "Water and Waste Water Filtration: Concepts and Applications," *Environ. Sci. and Tech.*, 5, 1105-1112 (1971). (Nominated 1989)

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 to them for this award. Note that papers in all areas of environmental engineering, including air pollution, water quality, solid waste, hazardous waste, etc. are eligible.

Stephen J. Randtke

Results of a Graduate Assistantship Survey Fall 1990

AEEP's Past-President, Tom Keinath, conducted a graduate assistantship survey of twenty-five randomly selected environmental engineering graduate degree programs. The objective of the survey was to determine (1) the monetary amount of master's and PhD assistantships awarded by typical graduate programs in support of a student's subsistence, and (2) the extent to which the various programs provide payments, allowances, and/or

waivers for tuition and university fees. Results of the survey are provided for your information.

1) The graduate degree granting programs surveyed enrolled an average of 36.0 (S=23.2) master's students and 14.1 (S=10.9) PhD students. The largest master's degree program surveyed had an enrollment of 100, while the smallest had six. The largest PhD program had an enrollment of 54, while the smallest had five. The largest program overall had an enrollment of 118, while the smallest had 12 students.

2) These 25 programs provided subsistence stipends (total stipends minus payments required of a student for tuition and university fees; see item five) to an average of 58.2% (S=27.7%) of enrolled master's students and 90.3% (S=15.0%) of PhD students. The percentage of graduate students provided subsistence stipends at the programs surveyed ranged from 0 to 100 and 46 to 100 for master's and PhD programs, respectively.

3) Master's students awarded *standard* subsistence stipends received an average of \$8,582 (S=\$2,921) per calendar year. Such stipends ranged from \$7,000 to \$13,000 per year. Similarly, PhD student awarded *standard* subsistence stipends received an average of \$10,832 (S=\$2,077) per calendar year. The range for PhD stipends was \$6,160 to \$14,000.

4) Sixty percent of the programs surveyed indicated that they made subsistence awards in excess of the *standard* stipend for master's students; 72% said they did so for PhD students. Also, 48% of the master's and 24% of the PhD degree programs made subsistence awards at levels less than the *standard* rate. Maximum subsistence stipends averaged \$12,312 (S=\$2,777) for master's students and \$14,638 (S=\$3,448) for PhD students.

5) Twenty-three of the 25 programs surveyed either grant tuition/fees waivers, pay tuition/fees in the student's behalf, or **directly pay the student a tuition/fees allowance in addition to the subsistence stipends** described under items (2) through (4). Several programs also provide tuition/fees waivers or allowances to some graduate students not receiving stipends. Tuition waivers/payments/allowances ranged from \$2,000 to \$15,100 for master's students and \$2,564 to \$15,100 for PhD students.

1990-91 Committee Assignments

COMMITTEE	CHAIR
AAEE Liaison	Paul L. Bishop
AWWARF Liaison	Jack Cleasby
Archives	David W. Hendricks
Arrangements	Bob Bailod
Audit	David Long
Awards	Steve Randtke
Bylaws	
Computer Software	Joe DePinto
Distinguished Lecturer	Fred Pohland
Education	Mike Stenstrom
1990's Education	
Conference Planning	Ken Williamson
Enrollment Survey	Bill T. Ray
Latin American Initiatives	Ricardo Jacquez
Legislative Analysis	Tom Keinath
Membership	Gene Parkin
Newsletter	Chet Rock
Nominating	Tom Keinath
Publications	Desmond F. Lawler
Relations with USANC	David Jenkins
Specialty Conference	H. David Stensel
Sustaining Member Liaison	George Tchobanoglous
WPCF Liaison	Walter J. Weber
Water Quality 2000	Walter J. Weber

AEEP/AWWA Seminar

AEEP will sponsor a workshop entitled "Inorganic and Organic Polymeric Coagulants: Theory and Application" at the AWWA Annual Conference. Kimberly Gray from the University of Notre Dame and Frank Mangravite from CFM Environmental Services will make presentations and Desmond Lawler will chair the session, beginning at 5:15 pm Monday, June 24, at the Confer-

ence Center. An abstract of the presentations follows.

Increasingly stringent water quality criteria necessitates greater emphasis on the optimization of chemical technologies to destabilized colloidal particles and remove dissolved components in the design and operation of water treatment processes. This seminar considers this objective by exploring the topic of polymeric coagulant use from theory through laboratory and pilot scale tests to full scale implementation in water treatment. The seminar will be divided into two parts. The first presentation will focus on the theory and development of inorganic metal polymers and will show results from laboratory and pilot studies. Various methods of preparation and characterization of iron and aluminum polymers will be discussed. These polymeric metal suspensions have been shown to be highly effective under a range of conditions such as low temperature, and for a number of applications such as direct filtration. The influence of water quality parameters such pH, calcium concentration, alkalinity and TOC on the coagulation performance of metal polymers will be compared to that of the simple salts. In addition, the advantages and disadvantages of aluminum and iron polymeric preparations will be compared. Based on these data, ways to optimize the performance of metal polymers and future research needs will be suggested.

The second presentation will focus on the uses of organic polymers in water treatment and the various issues involved in selecting coagulants for full scale application. In order to select the best chemical technology, the engineer must look beyond the traditional use of alum or ferric chloride and the most readily available organic polymer and consider the range of products available. The advantages and disadvantages, and the composition and impurities of these products will be discussed as will such details as possible interactions with other chemicals, how to obtain chemical samples, bench testing procedures, handling and storage requirements and costs on a delivered basis. The influence of mixing conditions and the order of chemical addition which can be very critical to obtaining optimum performance will be addressed.

In both talks special attention will be paid to educational needs of students and faculty. The purpose of this

seminar is to provide participants with a comprehensive and current review of the theory and application of polymeric coagulants in water treatment. Useful information in the form of handouts will be made available to members of the audience.

For more information contact:

Brian A. Dempsey

“AEEP-25 Years”

The book *AEEP-25 Years* was commissioned by the AEEP Board of Directors in 1987 to commemorate the 25th Anniversary of AEEP. The history of the first 25 years of AEEP was prepared by Dave Hendricks, Archives Chair and by Bob Baumann, Charter Member of AEEP and twice AEEP President. The book, completed in June 1990 after over three years of effort, was based upon an in-depth assimilation of the archives documents, complemented by interviews with AEEP members, and first hand knowledge. The book is an account of the genesis of AEEP as an organization, the movers that brought the organization into being, the turbulence of the beginning, and the character and accomplishments of the organization that finally was formed. The Appendix serves as a reference, listing officers, members, charter documents, original letters of historical interest, awards, and a fold-out spreadsheet that summarizes AEEP history for the first 25 years, e.g. officers, conferences, awards, distinguished lecturers, Congressional testimonies, etc. Readers have described the book as “reads like

a docu-drama”, “must reading for all AEEP members”,

AEEP-25 Years is available from Gene Parkin, address as follows:

Professor Gene Parkin
Department of Civil and Environmental
Engineering
University of Iowa
Iowa City, IA 52242

The following form may be used.

Please send one copy of *AEEP-25 Years* to:

Name _____

Address _____

I have enclosed a check for \$20 per copy made payable to AEEP.

Deadline for September 1991 Newsletter

Please submit articles for the September issue of the AEEP Newsletter to the editor, Chet A. Rock, (Dept. of Civil Engineering, University of Maine, Orono, ME 04469) by August 1, 1991.

PERSONAL ACCOMPLISHMENTS

Charles Haas joins Drexel University

Charles N. Haas has joined Drexel University as the Betz Chair Professor of Environmental Engineering. He

joins a group of nearly 30 faculty affiliated with the Environmental Studies Institute, and will also be an active member in the Department of Civil and Architectural Engineering.

GENERAL NEWS

Academy of Environmental Engineers

The Academy of Environmental Engineers has elected new officers:

President:	Joseph F. Lagnese, Jr.
President-Elect:	Jerome B. Gilbert
Vice President:	Frederick G. Pohland
Treasurer:	Charles A. Willis

"Aquatic Chemistry Concepts"

Aquatic Chemistry Concepts by Jim Pankow will be available for 1991 fall classes. If you would like to see an examination copy, please send your request, on university letterhead, to:

LEWIS PUBLISHERS, INC.
Attn: Brian Lewis, Publisher
121 South Main Street
P.O. Box 519
Chelsea, MI 48118

Call for Papers

•IAWPRC

IAWPRC will hold its 16th Biennial Conference and Exhibition in Washington, D.C. on May 24 - 30, 1992. Manuscripts must be submitted by July 1, 1991. For additional information contact:

J.W. Patterson, Chair
USA Organizing Committee
c/o CAPS Ltd
50 Green Bay Road
Box #406
Lake Bluff, IL 60044
☎ (708) 234-2353
Fax: (708) 234-2874

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

AIChE - Environmental Division
1st Place - \$300
2nd Place - \$200
3rd Place - \$100

Certificates and awards will be presented at the Summer National AIChE Meeting to be held in Pittsburg, PA, in August of 1991. The AIChE will also provide the 1st place winner with attendance at the awards presentation. In addition, the paper is intended for publication in *Environmental Progress*.

Contest Entry Rules:

1. The work must be a first paper (i.e., report on original unpublished work).
2. The paper must report on research or investigation related to an environmental program (i.e., lab experiment, theoretical development, a numerical analysis or modeling).
3. The author must be a member of the student chapter of AIChE.

4. The work must be performed during the author's undergraduate enrollment and the paper must be submitted prior to or within six months of graduation.

Submit manuscript with cover letter by May 14, 1991 to the Second Vice Chairman of the Environmental Division as shown below:

Peter B. Lederman, Ph.D., P.E.
Roy F. Weston, Inc.
One Weston Way
West Chester, PA 19380
☎ (212) 430-7422
Fax. (212) 430-3158

•**UNITERRA '91**, International Exposition and Conference on Global Environmental Management, October 23-27, 1991, Vienna, Austria. For further information contact:

Peter J. McKenna
1700 K. Street, NW
Washington, D.C. 20006-3824
☎ (202) 659-4557
Fax: (202) 457-0776

International Association on Water Pollution Research and Control

USANC, the United States National Committee of IAWPRC, is sponsoring a number of free one-year memberships in IAWPRC for graduate students currently enrolled in a U.S.A. environmental engineering programs. Faculty advisors are invited to submit the name of a worthy student to David Jenkins, Chair USANC, 637 Davis Hall, University of California, Berkeley, CA 94720, by May 15th, 1991. Benefits of membership include receipt of the journals *Water Research* and *Water Quality International*, member rates for publications and conferences and involvement in the wide range of activities of the premier international organization in water pollution research and control.

Research Partners Sought for Work on the *Algal Turf Scrubber*™

Ecological Systems, Inc. is working towards commercializing a new and innovative biological method for water purification, the *Algal Turf Scrubber*™ (ATS). Invented by Dr. Walter Adey, a principal of the firm and Director of the Smithsonian Institution, the ATS technology utilizes a natural community of attached algae to treat many types of water, whether it is fresh, brackish or marine. The ATS treatment capabilities include:

- Nutrient removal (nitrogen, phosphorus)
- BOD removal
- Detoxification (heavy metals, pesticides)
- Oxygenation of the water to saturation levels with no mechanical aeration
- pH increase
- Disinfection

Areas of potential application for the *Algal Turf Scrubber*™ include:

- Drinking water treatment
- Sewage or septage treatment
- Ground water cleansing
- Closed aquaculture support
- Industrial waste water treatment.

In its effort to further this technology towards commercialization, ESI is interested in establishing a research partnership to do intermediary scale, pilot experiments. Additional funding for projects may be required from other sources such as EPA. Individuals/institutions interested in exploring a research partnership may contact:

Dr. Regas Santas
Ecological Systems, Inc.
7201 Wisconsin Avenue
Suite 310
Bethesda, Maryland 20814
☎ (301) 656-2381
Fax: (301) 656-4421

OTHER CONFERENCES AND EDUCATIONAL PROGRAMS

Summer Programs at Michigan State University

The Center for Microbial Ecology, an NSF Center for Science and Technology at Michigan State University, will sponsor the following programs in 1991: (1) a symposium on **Microbial Community Structure: Concepts and Principles**, June 7-10, at the MSU Kellogg Biological Station; (2) a **Laboratory Workshop on Environmental Applications of Gene Probe Methodologies**, June 10-28; and (3) ten week **Undergraduate Internships**, June-August, specific dates to be arranged individually.

Scheduling of the Symposium and the Gene Probe Workshop is arranged so that interested individuals may attend one or both of these programs. The focus of the Symposium will be on structure and diversity within ecological communities. Although emphasis will be on microbial communities, speakers will also present concepts developed from higher plant and animal communities. The approach will be to synthesize common or divergent views on community structure taken from these various fields of study. Accompanying poster sessions will focus on modern techniques used to examine community structure in microbial communities.

The **Environmental Gene Probe Workshop** is designed to introduce the use of nucleic acid hybridization methodologies for environmental research. A basic background in manipulative techniques related to DNA cloning will be included in the course, and experience in molecular biology is not required. Graduate students, post-docs, faculty and other professional scientists are eligible.

Submit inquiries to:

The Center for Microbial Ecology
540 Plant and Soil Science Building
Michigan State University
East Lansing, MI 48824-1325
☎ (517) 353-9021
Fax. (517) 353-2917

American Society for Microbiology

The American Society for Microbiology announces the following programs to be held in Dallas, Texas on May 4th & 5th, 1991.

Date: Saturday, May 4, 1991

Workshop Program: Water Borne Pathogens & Principles of Bioremediation

Date: Sunday, May 5, 1991

Workshop Program:

Microbial enhanced oil recovery (MEOR)

Field application of bioremediation

Detection methods for specific bacteria and viruses in water and wastewater

Application of nucleic acid probes in environmental biotechnology

Recent advances in aquatic microbial ecology

Living in extreme environments

Management of infectious wastes

Fee: \$200-\$325

For more information, please contact:

Workshop Coordinator

American Society for Microbiology

1325 Massachusetts Avenue, NW

Washington, D.C. 20005

37th Annual IES Technical Meeting and Equipment Exposition

The Institute of Environmental Sciences 37th Annual Technical and Equipment Exposition will be held at the Town and Country Hotel, San Diego, California May 6-10, 1991. For more information, contact Julie Kendrick at (708) 255-1561.

36th Institute in Water Pollution Control

Manhattan College
June 3-7, 1991

The 36th Institute in Water Pollution Control will be held at Manhattan College in June 1991. Two courses will be offered:

1. TREATMENT OF MUNICIPAL, HAZARDOUS AND TOXIC WASTEWATERS, June 3, 1991 - June 7, 1991

2. CONTAMINATED SEDIMENTS: MODELS FOR CRITERIA, EXPOSURE AND REMEDIATION, June 3, 1991 - June 7, 1991

Enrollment, on a pre-registration basis, will be limited. These continuing engineering programs are designed for practicing engineers and scientists in governmental agencies, industrial concerns, consulting engineering offices, research organizations and academic institutions.

For further information, contact:

Mary Dintrone
Program Coordinator
Environmental Engineering & Science Program
Manhattan College
Riverdale, NY 10471
☎ (212) 920-0277

“Aquifer Reclamation and Source Control”

Boxborough, Massachusetts
June 19-20, 1991

The New Jersey Institute of Technology, in conjunction with the USEPA, ASCE, WFCF and the Northeast Hazardous Materials Research Center will be conducting a conference on “Aquifer Reclamation and Source Control.” The focus of the conference will be on technology transfer, especially in those areas of new and innovative methodologies.

For further information contact:

New Jersey Institute of Technology
Division of Continuing Education
Newark, NJ 07102
Attn: Ron Rubin
☎ (201) 596-3065
(800) 624-9850
Fax. (201) 596-3288

Seventh Conference on Computing in Civil Engineering and Symposium on Data Bases

Washington, D.C.
May 6-9, 1991

The Symposium will be held at the Ramada Renaissance Techworld in Washington, D.C. Initiated in 1978, this series provides a continuing forum for the advancement of intelligent computer use in the civil engineering profession.

National leaders in academia and the business community will host 35 sessions covering a range of topics including: data base applications in materials and environmental engineering; expert systems in construction and structural engineering; innovations in transportation; and a panel discussion on educational issues. For more information, contact:

Conference Department
American Society of Civil Engineers
345 East 47th Street
New York, NY 10017
Tele. (212) 705-7350
Fax. (212) 980-4681

EMPLOYMENT OPPORTUNITIES

Georgia Institute of Technology

The School of Civil Engineering is seeking an individual to fill a tenure-track position in **Environmental Engineering**. Preference will be given to individuals with expertise in areas of toxic and hazardous waste management; biological contaminants; biological treatment and remediation systems; and process-modelling and computer applications. A position at the **entry** level of Assistant Professor is anticipated although appointments at all levels can be considered.

Successful applicants will be expected to teach at the undergraduate and graduate levels; acquire sponsored research; produce scholarly publications; and advise BCE, MSEnvE and PhD students. Applicants should possess a doctorate in Civil or Environmental Engineering, or an equivalent, by the time of appointment and, preferably, have baccalaureate training in engineering from an accredited university. The position will be available until filled.

Please send a detailed resume and names of at least three references to:

Professor Paul H. Sanders
Acting Director
School of Civil Engineering
Georgia Institute of Technology
Atlanta, GA 30332-0355.

Information about the **Environmental Engineering Program** can be obtained from Dr. F. Michael Saunders, Professor and Program Coordinator, Environmental Engineering, (404) 894-2265. Georgia Tech, a unit of the University System of Georgia, is an equal opportunity/affirmative action employer.

Hebrew University of Jerusalem Jerusalem, Israel

Wanted: Candidates for Chair in Industrial Hygiene

Location: Division of Environmental Sciences, Graduate School of Applied Science and Technology, The Hebrew University of Jerusalem, Jerusalem, Israel.

Educational Requirements: PhD in Industrial Hygiene or related science or technological disciplines including engineering, chemistry, toxicology and biology.

Experience: Industrial Hygiene, Safety or Environmental Toxicology at academic institution preferably with some experience in industry; must have demonstrated ability in teaching and scientific research with publications in first rate peer reviewed journals; research contracts; applied research with industry; university teaching experience.

Special requirements: Willingness to settle in Israel and learn Hebrew Language to achieve teaching ability in Hebrew within three years. Candidate selected will serve as first incumbent in new chair of Industrial Hygiene and will establish new teaching and research program. Candidate will also participate in a challenging interdisciplinary graduate program of environmental sciences teaching and research.

Conditions: Tenure track appointment with initial academic rank based on qualifications of candidate. Salary and fringe benefits according to the standards currently in force for academic appointments at the Hebrew University. Candidate will be considered for a tenure

appointment only after the trial period and meeting the academic accomplishments required by the University. Assistance to new immigrants in Israel is provided by the Jewish Agency and Ministry of Absorption.

Submit: Resume, list of publications and names of three references from academic institutions.

For further information, contact:

Professor Avner Adin, Director
Division of Environmental Sciences
Hebrew University
Jerusalem, 91904
ISRAEL
☎ 972-2-584157
Fax: 972-2-666804

Indiana University

The Bloomington campus of the School of Public and Environmental Affairs is recruiting for two environmental science positions starting in the 1991-92 academic year. Positions are tenure-track. Teaching at graduate and undergraduate levels will be expected, along with the demonstrated ability to establish and maintain an active, applied research program. All faculty are expected to have the appropriate terminal degree and to have demonstrated their research abilities.

Environmental Scientist/Engineer (Rank Open) - Area of research specialization open but preference given to candidates with hazardous waste, combustion engineering, or atmospheric sciences background. Post-doctoral research experience preferred. Interested candidates should send their application (including a vitae) to:

Dean John L. Mikesell
School of Public and Environmental Affairs
Indiana University
Bloomington, IN 47505

Oklahoma State University

Applications are invited for the following position in Environmental and Water Resources Engineering program in the School of Civil Engineering at Oklahoma State University. Tenure-track/Tenured faculty. Rank open, nine-month appointment, salary commensurate with rank and experience. PhD in environmental engineering or related field. Any primary research interest considered. However, preference may be given to individuals interested in developing research programs and coursework in one or more of the following: solid waste management; sludge management; industrial and hazardous residuals; and environmental aquatic chemistry. Research funding opportunities are available at the institutional, state, and national levels. Available August 1991. Applications will be accepted until the position is filled. Submit a resume and the names, address, and telephone numbers of at least three references to:

Dr. Robert K. Hughes, Head
School of Civil Engineering
207 Engineering South
Oklahoma State University
Stillwater, OK 74078.

Oklahoma State University is an affirmative action/equal opportunity employer.

Rice University George R. Brown School of Engineering

Applications are invited for a tenure-track position in ENVIRONMENTAL ENGINEERING, beginning August, 1991. This position is at the level of ASSISTANT PROFESSOR and emphasizes BIOCHEMICAL PROCESS ENGINEERING applied to water, wastewa-

ter, and hazardous waste treatment as well as natural systems such as ground and surface waters. The successful candidate must have outstanding research capabilities as well as a strong interest in teaching at the undergraduate and graduate levels, establishing an active experimental research program, and directing graduate student research. A PhD or equivalent degree in environmental engineering or an allied field is required. Excellent communication skills in both spoken and written English are necessary and university teaching and/or research experience is desirable. Salary is competitive and negotiable.

Interested candidates should submit a resume and the names, addresses and telephone numbers of at least three references to:

Professor C.H. Ward, Chair
Department of Environmental Science and Engineering
Rice University
P.O. Box 1892
Houston, Texas 77251

Applications will be reviewed beginning January 15, 1991 and will be accepted until the position is filled.
EEO/AAF

Texas A&M University

The Department of Civil Engineering at Texas A&M University has a position open in all areas of Environmental Engineering. Special consideration will be given to those candidates with additional expertise and/or practical experience in numerical analysis and computational mechanics; risk analysis (including applied probability and statistics); expert systems (including uncertainty analysis) and artificial intelligence; control theory, robotics, and automation; engineering design (including CADD and decision analysis); and systems engineering (including quality management and human factors.)

Ideal candidates will have a proven track record of refereed publications, funded research, effective teaching, and a clear potential for leadership. This position is tenure-track. Rank and salary are commensurate with qualifications and experience. This position will be filled on a timely basis.

Interested persons should send summaries of personal data, education, publications, professional experience, and any other noteworthy accomplishments, together with names and addresses of three references to:

Faculty Search Committee (Env)
Department of Civil Engineering
Texas A&M University
College Station, TX 77845-3136

APPLICATION FOR MEMBERSHIP in the Association of Environmental Engineering Professors

Name _____

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Dues are payable to the association on a calendar year basis.
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Associate Professor	25.00	18.75	12.50	6.25
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Affiliate Member	20.00	15.00	10.00	5.00

Please return this form along with your dues to:

Gene F. Parkin
Department of Civil and Environmental Engineering
University of Iowa
Iowa City, IA 52242

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