



PRESIDENT'S CORNER

AEEP's recent luncheon meeting of the membership and the ensuing workshop held the following day concluded with San Francisco's **Great Quake of '89**. As I am certain all experiencing this will agree, it was a most memorable event. I am hopeful that all AEEP members in attendance at the San Francisco meetings escaped without physical or psychological injury.

AEEP initiated a new activity at the San Francisco conference of the Water Pollution Control Federation by hosting a "meet and greet reception" to give the directors the opportunity to become better acquainted with new members. Because this reception was an unqualified success, far exceeding our expectations, I feel certain that the directors will continue this activity. It appeared to have met a need for fellowship and camaraderie among academics in addition to our stated objective.

One of AEEP's true strengths has always been that the organization, unlike most other organizations serving environmental professionals, gives its new and younger members the opportunity to become integrally involved in its activities, especially its committees. In fact, this was one of the primary reasons AEEP was founded. Although the directors have endeavored to adhere to this ideal through the years, we have seen a "graying" of those actively participating in AEEP's broad range of activities. While this, to a certain extent, reflects an aging of academics in the environmental engineering profession, it also reflects the fact that we have fewer young members extensively involved in the organization's activities than we have had in the past. Consequently, let me reaffirm the tenet that AEEP is committed to giving its younger members the opportunity to participate in the activities of AEEP in a meaningful way. Toward this end, I cordially invite our new and younger members to write or call me (803/656-5572) indicating how you might wish to become involved in AEEP's

activities. I am especially interested in hearing from our female members.

At the annual membership meeting held in San Francisco plaques were presented to AEEP's founding and organizing members in recognition of their vision, first in conceiving an organization of environmental engineering professors, and secondly, in carrying that vision to fruition to the benefit of all present and future members. The visionary founding members who conceived of our organization include E.F. Gloyna, W.J. Kaufman, H.F. Ludwig, E.A. Pearson, L.G. Rich and G.A. Rohlich. This group of six were joined by E.R. Baumann, D.E. Bloodgood, J.A. Borchardt, W.W. Eckenfelder, Jr., R.S. Engelbrecht, J.E. Kiker, Jr., P.H. McGahey, D.J. O'Connor, G.J. Schroepfer, and R.O. Sylvester in transforming the vision to a viable organization. All of us are indebted to these forefathers of our organization. Please extend your gratitude should you have contact with any of them in the future.

Earth Day 1990, the 20th anniversary celebration of the original Earth day, will be held on **22 April 1990**. This will be a global event involving 90 countries to develop an environmental sensitivity and an environmental ethic throughout all of humanity. Just as the original Earth Day led to the passage of the Clean Air Act and the Clean Water Act, the intent in the United States is to use this 20th anniversary event to launch certain environmentally responsible initiatives to benefit all the citizenry of the country. Of special concern are global warming, acid rain, ozone holes, rainforest destruction and other related problems. Should your campus not already be involved in planning an Earth Day 1990 event and a program of action to follow, you might wish to spur your campus leadership into action should you agree that developing an environmental ethic among our entire student populace is a worthy objective. Information can be obtained at the following address:

Earth Day 1990
P.O. Box AA
Stanford University
Stanford, CA 94309
☎ (415) 321-1990 or
Fax 415/321-2040

I trust that you are having a productive Fall 1989 semester, and wish you an enjoyable holiday season and a productive and prosperous New Year.

Tom Keinath
President

AEEP NEWS AND ANNOUNCEMENTS

Recent AEEP Board Activities

- Several members of the AEEP Executive Committee have met with members of EPA and Congressional staff persons in an attempt to push for increased funding for the EPA Office of Exploratory Research. Dick Luthy testified before House and Senate panels regarding the need for funds for basic research and manpower training.
- AEEP was involved in a joint conference with the Pan American Health Organization (PAHO) regarding the possibilities of developing better working relationships between AEEP, PAHO, AID, and environmental engineering programs in Latin America.
- Discussions have started with IAWPRC regarding joint sponsorship of a European Lecture Tour. This would entail a North American member of AEEP completing a lecture tour similar to the current AEEP Distinguished Lecture Tour which is held on this continent.
- Efforts are underway to develop an updated second edition of the *AEEP Computer Software Manual*.
- Planning for the next Education Conference is beginning with a solicitation of formal proposals from potential host universities. Also, the possibility of AEEP sponsoring Specialty Teaching/Research Conferences is being considered.
- Bruce Rittmann is coordinating the development of an *AEEP Expertise Directory*. A trial survey will be conducted as part of the 1990 dues process. Full membership implementation is scheduled for 1991.

Congratulations

New AEEP Officers and Board Members

The AEEP officers for 1990 are as follows:

President — Tom Keinath, Clemson University
Vice President — Bruce Rittmann, University of Illinois
Secretary — Bill Knocke, Virginia Tech

Treasurer — Brian Dempsey, Pennsylvania State University.

Appointed to the Board for three year terms beginning this past October were:

Bob Baillod, Michigan Technological University
Gene Parkin, University of Iowa
Ken Williamson, Oregon State University

Congratulations and Best wishes to you all in the coming year!

Thank You

Outgoing Officers and Board Members

The term of the following Board members expired in October, 1989:

George Tchobanoglous (outgoing President)
H. David Stensel (outgoing Treasurer)
James E. Alleman

Thanks much to you all for your excellent efforts over the years. Please don't stray far from AEEP. We still need you!

Outstanding Doctoral Dissertation Awards

Engineering Science /AEEP Award

- **Cheng-Fan Lin**, "Adsorption of Metals and Dissolution of Ferrihydrite in the Presence of Polyphosphates," under the supervision of Mark Benjamin, University of Washington.

CH2M-Hill /AEEP Award

- **Jacques Manem**, "Interactions Between Heterotrophic and Autotrophic Bacteria in Fixed-Film Biological Processes Used in Drinking Water Treatment," under the supervision of Bruce Rittmann, University of Illinois.

AEEP Outstanding Paper Award

The Awards Committee received 10 nominations for the 1989 Outstanding Paper Award. The following

companion papers on activated carbon adsorption co-authored by Weber and Morris in 1963-4 were selected to receive the award.

- W.J. Weber, Jr., and J.C. Morris, "Kinetics of Adsorption on Carbon From Solution".
- W.J. Weber, Jr., and J.C. Morris, "Equilibria and Capacities for Adsorption on Carbon".

1989 AEEP Outstanding Service Award

The AEEP Outstanding Service Award was received by Dr. D.W. Hendricks at Colorado State University for his work on the AEEP history document.

1990 Distinguished Lecturer

The AEEP Distinguished Lecturer Committee selected Dr. Walter J. Weber, Jr. of the University of Michigan to be the 1990 Distinguished Lecturer. This selection was made from a list of 15 qualified nominees from both the United States and Canada. The process of contacting member programs to develop a coordinated lecture tour has begun with a tentative schedule between February and April 1990. Final selection of participating institutions will be based on response to this solicitation, lecturer preference and previous participation. The membership is encouraged to provide the committee an expression of their interest with details supportive of requests to be included in the tour.

For more information contact:

Dr. Frederick G. Pohland
Dept. of Civil Engineering
1141 Benedum Hall
University of Pittsburgh
Pittsburgh, PA 15261
☎ (412) 624-1880

AEEP Meet and Greet

AEEP sponsored a Meet and Greet session at the 1989 WPCF conference. The session was intended not only to be a social gathering, but also to provide for an opportunity to discuss potential future AEEP activities. The session was so successful that the Board is considering making the Meet and Greet an annual event.

WQ 2000

At the 1988 AEEP Board Meeting in Dallas Walt Weber was assigned liaison responsibility for a WPCF-related initiative referred to as the Water Qual-

ity 2000 (WQ 2000) Program. The Program was designed as a national consensus-building effort relative to future U.S. water quality policies. The WQ 2000 activity initiated in 1988 with the financial (\$60,000) and administrative support of the WPCF has now matured into an independent program involving a constituent "Congress" of approximately 50 national organizations. The Program has developed Articles of Agreement, secured a \$150,000 seed grant from the USEPA, and established an administrative office headed up by a full-time project director, Tim Williams, who was formerly government affairs manager for WPCF.

Aquifer Bioremediation Materials

Written materials used at the AEEP Workshop on In Situ Aquifer Bioremediation can be obtained for \$10 from Dr. Desmond Lawler, Dept. of Civil Engineering, University of Texas, ECJ8.6, Austin, Texas, 78712. These materials include reprints of three key papers on bioremediation, a description of the BIOPLUME II model for describing bioremediation, and a list of publications and presentations of the National Center for Ground Water Research.

AEEP Dues

Membership dues notices will be sent in early December. Payments should be made by **February 1, 1990** according to the following schedule:

Full Professor — \$50
Assistant and Associate Professor — \$25
Affiliate Member — \$20

Deadline for the April 1990 Newsletter

Please mail articles for the April issue of the AEEP *Newsletter* to the editor, G. D. Boardman, by **March 1, 1990**.

Survey of Environmental Engineering and Science Graduate Programs

Bill Ray of the Department of Civil Engineering and Mechanics at Southern Illinois University conducted a survey of graduate student enrollments at universities in the U.S. and Canada. Of the 150 universities polled 75 have thus far responded to Bill's questionnaire. A table summarizing some of the results of the survey is provided in this Newsletter. Readers are cautioned to read Dr. Ray's entire report, which was presented to AEEP this past October, before using/quoting information from the table.

Summary of Graduate Student Enrollment

YEAR	1982	1983	1984	1985	1986	1987	1988
NUMBER OF RESPONSES	88	67	59	85	62	84	75
Water and Wastewater	935	733	631	770	743	931	726
Air Pollution	81	71	100	127	75	106	89
Solid & Hazardous Waste	46	42	76	126	112	185	204
Water Resources	436	225	219	418	261	426	302
Envr. Science & Management	594	226	344	543	284	395	152
Other	58	206	162	181	61	102	175
Total Full Time Enrollment	2150	1503	1532	2165	1536	2145	1648 ¹
Part Time enrollment	540	398	391	397	405	542	922 ²
TOTAL ENROLLMENT	2690	1901	1923	2562	1441	2687	2570

¹ Funded graduate students.

² Unfunded graduate Students.

1990 AEP Committee Assignments

Committee	Chair	Vice-Chair
AAEE Liaison	Paul L. Bishop	R. Bruce Hanes
AWWARF Liaison	Jack Cleasby	
Archives	David W. Hendricks	
Arrangements	Bruce Rittmann	
Audit	John F. Ferguson	
Awards	Steve Randtke	
Computer Software	Steve Chapra	Jon Liebman
Distinguished Lecturer	Fred Pohland	
Education	Mike Stenstrom	Robert Baillod
1990's Education		
Conference Planning	Robert Baillod	
Enrollment Survey	Bill T. Ray	
Legislative Analysis	Richard Luthy	
Membership	William Knocke	
Newsletter	Gregory D. Boardman	
Nominating	George Tchobanoglous	
Publications	Desmond F. Lawler	
Relations with USANC	Thomas M. Keinath	David Jenkins
Specialty Conference	H. David Stensel	Jim Alleman
Sustaining Member Liaison	John Andrews	
WPCF Liaison	Walter J. Weber	Ken Kerri
Water Quality 2000	Walter J. Weber	Charles O'Melia

AEEP Financial Statement

	Initial Balance 9/20/88	Income	Expenses	Transfers	Final Balance 10/1/89
PUBLICATION	5,129.35	4,407.17	3,077.06		6,459.46
SAVINGS	16,659.93	972.19		-7,053.20	10,578.92
SECRETARY FUNDS	-0-				1,405.23
GENERAL	13,920.22			+7,053.20	20,179.01
office		-0-	5,609.42		
newsletter		-0-	3,143.92		
publications		792.29	-0-		
board mtg.		-0-	3,105.19		
dist.lect.		9,360.00	8,582.50		
workshops		438.00	5,032.74		
committees		-0-	2,158.93		
research conf.		7,500.00	-0-		
dues (member)		14,849.80	-0-		
dues (USANC)		-0-	1,000.00		
awards		-0-	2,380.35		
labels		220.00	-0-		
interest		854.39	-0-		
AEEP luncheon meeting		480.00	1,440.21		
register		5,445.00	6,875.34		
TOTAL	35,709.50	45,318.84	42,405.66		38,622.68

GENERAL NEWS

IAWPRC May Be For You

The International Association on Water Pollution Research and Control (IAWPRC) was formally organized in 1965 having grown out of several international conferences on water pollution research organized in the early 1960's. IAWPRC is the lead organization that deals with all aspects of water pollution control in the international arena.

IAWPRC is managed by a Governing Board that consists of representatives of each National Committee. In the U.S., the United States of America National Committee (USANC) is the representing group. It consists of two delegates and two alternates that are appointed by each of six sponsoring organizations including ACS, AEEP, AIChE, ASCE, ASM, and WPCF. USANC coordinates all of the USA's activities relative to IAWPRC.

IAWPRC's activities center on the international exchange of information in water pollution control. This is achieved in many ways. The primary avenue is through biennial international conferences that have been held at many locations throughout the world during the past two decades. The next biennial conference is scheduled for **29 July to 3 August 1990** to be held in Kyoto. It promises to be an excellent conference; technically as well as socially. The 1992 conference is scheduled for Washington and 1994 for Budapest.

Another avenue through which IAWPRC meets its information exchange objectives is through its sponsorship of regional and specialized conferences (6-8 are scheduled per year on all aspects of water pollution control). **It also sponsors task groups** that are charged to carry out an investigation within a finite time scale and **study groups** that have an ongoing program of activities. Study groups that are currently

active focus on topics such as water virology, biological phosphorus removal, instrumentation, and microcomputers. Many IAWPRC members become actively involved in these types of activities.

Finally, IAWPRC is actively involved in publishing. It publishes two leading refereed international technical journals: *Water Research* and *Water Science and Technology*. It also publishes *Water Quality International*, a current events journal, many books, and a directory yearbook.

U.S. engineers and scientists can join IAWPRC as Individual Members. Annual membership fees are \$50 which includes subscriptions to *Water Research* and *Water Quality International* and entitles you to receive a copy of the Yearbook/Directory. Student membership fees are \$25.

The organization is a very active one from which many WPCF members can benefit and to which many can fruitfully contribute. It offers one the opportunity to become involved in the international affairs of the water pollution control field.

For more information and to obtain a membership application form contact:

Dr. Tom Keinath
Environmental Systems Engineering
Clemson University
Clemson, SC 29634-0919
☎ (803) 656-5572

The 1990 Abel Wolman Doctoral Fellowship

Purpose of the Fellowship

The Abel Wolman Fellowship program is designed to encourage promising students to pursue advanced training and research in the field of water supply and treatment. To accomplish this objective, a doctoral fellowship providing up to two years of support will be awarded each year to the most outstanding applicant.

Eligibility

You are eligible if you anticipate completion of the requirements for the Ph.D. degree by fall of 1992 and are a citizen of a country that has an AWWA section (United States, Canada, or Mexico).

Support Provided

The fellowship will provide up to two years of support. The initial award will be for one year and will provide:

- A \$10,000 stipend distributed over 12 months
- \$1,000 for research supplies and equipment
- An education allowance of up to \$4,000 to cover the cost of tuition and other fees.

Contingent on the availability of funds, a second year of support will be awarded upon submission of

evidence of satisfactory progress and approval by a review committee. A portion of the allotment for research supplies and equipment may be used for travel, providing that the travel is essential to the research.

Time Schedule

Application, including all attachments, must be received no later than **February 15, 1990**. The recipient will be notified by **July 1, 1990**, and support will be available for the fall of 1990.

Application forms and additional information are available from:

Abel Wolman Doctoral Fellowship
American Water Works Association
6666 W. Quincy Avenue
Denver, Colorado 80235
☎ (303) 794-7711

Larson Aquatic Research Support (LARS) Scholarships

Purpose of the Scholarships

Dr. Thurston Larson emphasized the need for strong graduate programs in water chemistry and related fields to train qualified, dedicated scientists and engineers who could provide leadership in the effort to improve water quality. The LARS Scholarships are intended to honor him by promoting support and encouragement to outstanding graduate students preparing for a career in the fields to which Dr. Larson made significant contributions. Two LARS scholarships will be awarded annually: a \$3,000 scholarship for an M.S. student and a \$5,000 scholarship for a Ph.D. student.

Eligibility

You are eligible to apply if you are pursuing an M.S. or Ph.D. degree at an institution of higher education located in the United States, Canada, Mexico, Guam, or Puerto Rico. To be considered, M.S. candidates must complete the requirements of their degree sometime after **May 1, 1990**; Ph.D. candidates, sometime after **December 31, 1990**.

Recipients will be selected based on academic excellence and their potential to provide leadership in corrosion control, water treatment and distribution, aquatic chemistry, analytical chemistry or environmental chemistry. Completed applications must be received by **December 15, 1989** for M.S. candidates, and by **February 15, 1990** for Ph.D. candidates. The scholarship recipients will be notified in April and publicly recognized at the annual conference of the American Water Works Association in June.

Application forms and additional information are available from:

The LARS Scholarship Program
American Water Works Association
6666 West Quincy Avenue
Denver, Colorado 80235
☎ (303) 794-7711

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

Certificates and awards will be presented at the Summer National AIChE Meeting to be held in San Diego, California on **August 19-22, 1990**. The AIChE will also provide the **1st place winner** with the lowest cost airfare and **two (2) days** accommodation for 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 the sole author and must be a full-time undergraduate student in a school with an accredited chemical engineering program (faculty guidance is encouraged).
4. The student must be a member of the student chapter of AIChE. The work must be performed during the student'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, 1990**, to the Second Vice Chairman of the Environmental Division:

Dr. Joseph J. Cramer
Stone & Webster Engineering Corporation
245 Summer Street - 11th floor
Boston, MA 02107

Excellence in Environmental Engineering Awards

The American Academy of Environmental Engineers invites entrants for its 1990 Excellence in Environmental Engineering Awards. Awards will be given in four (4) categories: *Research, Planning, Design,*

and Operations/Management. The competition is open to any person or organization and to any type of environmental control or management project or program.

The hallmark of the award and the primary judging criteria include:

1. Demonstration of a comprehensive, *integrated* approach that considers all environmental media; i.e., air, water, land.

For example, solution of an air pollution problem must not create a land disposal problem or an adverse water impact that is not addressed by the project.
2. *Quality* as evidenced by the degree of user satisfaction and proven performance.
3. *Originality and innovation*, representing the application of new knowledge, a new application of existing knowledge, or an innovative mix of existing knowledge.
4. The *complexity* of the problem addressed.
5. The extent the project *contributes to* or offers the prospect of contributing to *social or economic advancement*.

Entries are due **February 1, 1990**. All entries will be displayed at the National Academy of Engineering on **February 21, 1990**, as part of National Engineers' Week. The winners will be publicly-announced and awards presented at the Academy's Awards Banquet **March 28, 1990**.

The Grand Prize winners in 1989 were:

Research — Electric Power Research Institute
Planning — Metropolitan Water Reclamation
District of Greater Chicago
Design — Malcom Pirnie, Inc.
Operations/Management — Pima County
Wastewater Management Department.

Persons interested in entering are encouraged to contact:

The American Academy of Environmental Engineers
132 Holiday Court, Suite 206
Annapolis, Maryland 21401
☎ (301) 266-3311

for details on how to enter.

ASCE Convention Stresses Environmental and Citizenship Themes

The new president of the American Society of Civil Engineers (ASCE) called on all members to become "citizen engineers." John Focht, Jr., was installed as the 121st president of ASCE at the Society's Annual Convention in New Orleans in October.

Focht challenged ASCE members to share their technical expertise by participating in civic and social organizations. "We should make an effort to increase our individual abilities to participate effectively in public groups, to assume leadership roles, to communicate more effectively, to be convincing, to negotiate, to persuade, to create win-win situations in all that we do," Focht said.

Lt. General Henry Hatch, the Chief of the Army Corps of Engineers, sounded a related message at the Convention's keynote luncheon. Hatch called on civil engineers to design environmentally sustainable projects. "The success of environmentally sustained development," Hatch said, "depends on creative, environmentally sensitive engineering." Hatch said engineers and environmentalists must work together. "I believe the concept of environmentally sustainable development is the unifying ethic that will reconcile these disciplines," he said.

Next year ASCE's Annual Convention will be held in San Francisco, California in November.

Civil Engineers Volunteer Their Expertise

Herbert Billings was ready for the earthquake that recently rocked northern California. Billings coordinated the American Society of Civil Engineers' (ASCE) volunteer effort to help determine if buildings damaged by the earthquake were safe. Through his efforts hundreds of volunteer civil engineers made preliminary "safety-hazard investigations" of scores of buildings in San Francisco, Oakland, Santa Cruz, Los Gatos, and Salinas.

The 65-year old Billings, a retired Manager of Engineering Services with the East Bay Municipal Utilities District, matched the scores of volunteers who came forward with city and county officials that needed help. For example, in San Francisco 60 volunteer civil engineers worked in teams of two with a licensed architect or city/county building inspector. Using criteria established in other earthquakes the teams looked for immediate safety hazards, such as loose cables or wires, and ceiling fixtures that might fall.

Billings is chairman of the ASCE San Francisco Section Disaster Response Committee. He said the committee prepared for this kind of emergency by

holding training exercises in November of last year and April of this year.

Guide on Underground Petroleum Releases Published by API

The American Petroleum Institute (API) has developed a new publication as part of their Underground Storage Tank Recommended Practices series. The publication, entitled *A Guide to the Assessment and Remediation of Underground Petroleum Releases*, is an update and expansion of API's 1980 publication *Underground Spill Cleanup Manual*. The manual was prepared by the Consulting and Hydrocarbon Services divisions of Geraghty & Miller, Inc. under contract to API and in response to the rapid technological development in underground hydrocarbon assessments and remediation.

The manual is available as Publication No. 1628 for \$16 from:

The American Petroleum Institute
1220 L Street, N.W.
Washington, DC 20005
☎ (202) 682-8375
Fax (202) 682-8537.

WHO Publication

The World Health Organization's (WHO) *Environmental Health Criteria Series* of publications has attracted attention over the past decade. The series has emerged as one of the most popular of WHO's various publishing programs. WHO is now undertaking a worldwide effort to ensure that this series of publications is distributed as widely as possible. As part of WHO's renewed effort to maximize distribution of these books, a special discount is being offered to those who are interested in purchasing a complete collection of titles in the series. Special discounts are also available should your association wish to place bulk orders for the complete series or for individual titles.

For more information contact:

The WHO Publications Center USA
49 Sheridan Avenue
Albany, NY 12210
☎ (518) 436-9686.

PERSONAL ACCOMPLISHMENTS

President IWEM 1989-90

Dr. Hugh Tebbutt, Senior Lecturer, University of Birmingham, was installed as President of the Institution of Water and Environmental Management (IWEM) on September 12, 1989.

Dr. Tebbutt graduated with a BSc from the University of Durham in 1957 and was awarded an MS degree by Massachusetts Institute of Technology in 1959.

Since 1984 Dr. Tebbutt has been co-ordinator of the Science and Engineering Research Council's Hydraulics, Pollution Control and Public Health Engineering program. In September, 1989, Dr. Tebbutt

became Chairman of the Regional Rivers Advisory Committee, Severn Trent Region, NRA.

Appointment to CADDET

Harvey M. Bernstein, President of the Civil Engineering Research Foundation and Managing Director of ASCE's Research Activities Committee has been appointed as a member of the U.S. National Team of the Center for the Analysis and Dissemination of Demonstrated Energy Technologies (CADDET). CADDET is a new technology transfer institute created by the International Energy Agency to accelerate information on demonstrated energy technologies among the member countries.

Bernstein will represent the civil engineering profession as a participant on the U.S. team headed by the U.S. Department of Energy. In this capacity, he will be able to use the results of the international demonstration projects to help keep the civil engineering community up-to-date on the latest in energy technologies.

Appointment to State Environmental Board

Samuel A. Schulhof, associate vice president of the University of Pittsburgh, has been appointed to Gov. Robert P. Casey's new Environmental Technology fund board. The 15-member board is part of the Environmental Technology Fund (ETF) and was formed by Casey in August, to encourage the development of Pennsylvania's environmental industries such as recycling and hazardous waste clean up.

The ETF Board includes representatives from state agencies and the private sector with expertise in environmental technology, and is chaired by Pennsylvania Commerce Secretary Raymond R. Christman. The board also is expected to work with the Governor's Recycling Market Development Task Force, chaired by Lt. Gov. Mark Singel, which is overseeing the state's efforts to develop markets for recycled products.

In addition to serving on the ETF Board Schulhof also is chairman of Pitt's Center for Hazardous Materials Research (CHMR) and president of the National Environmental Technology Applications Corp. (NETAC), both of which are based at Pitt's Applied Research Center (U-PARC) in Harmarville.

CONFERENCES AND EDUCATIONAL PROGRAMS

AWWA Annual Conference Universities Forum

Call for Papers

Cincinnati, Ohio, June 17-21, 1990

Abstracts

Abstracts are now being solicited for papers to be presented at the 19th Annual Universities Forum at the American Water Works Association Annual Conference. Student presenters/authors are being sought at all university levels. Papers must be based upon work done as a student during the 1988-1989 or 1989-1990 academic years.

Papers should be related to public water supply including treatment, quality control, distribution systems, and resource development and management. Water contamination and wastewater treatment considerations should be linked clearly to water supply and water treatment problems.

Abstract evaluation will be made by a subcommittee of the AWWA Student Activities Committee in early January, with those selected being notified shortly thereafter. Papers will be chosen for relevancy to the field, technical content, and clarity, with some consideration given to regional distribution. Abstracts

dealing with experimental studies having little or no data available will be given low priority.

Seven copies of an abstract not to exceed 5 total pages — no more than 2 pages of text, no more than 2 pages of figures and tables, and a completed *abstract information sheet* — should be submitted by **December 15, 1989** to the AWWA (see address below).

To request an *abstract information sheet* or further information contact:

Joette Cross
Universities Forum
AWWA
6666 W. Quincy Avenue
Denver, CO 80235
☎ (303) 794-7711, Ext. 2801.

4th International Gothenburg Symposium on Chemical Treatment

Madrid, Spain, October 1-3, 1990

The First Symposium in Gothenburg (1984) provided a long needed survey over the theory and application of chemical water and wastewater treatment. The Second Symposium (Berlin) was devoted to all aspects of recycling in chemical water and wastewater technology. The Third Symposium (Gothenburg) responded to the growing need for

pre-treatment in order to reduce pollutants at the source. The Fourth Symposium (Madrid, 1990) will focus on technology transfer from chemical treatment theory to practical treatment of drinking water and industrial/domestic wastewater. The Fourth Symposium (Madrid) will also include a concurrent workshop on the *Operation of Chemical Treatment Plants*.

For more information contact:

The International Gothenburg Symposia
on Chemical Treatment
c/o Kemira Kemi AB
Mrs. Agneta Lindquist
Box 902
S-251 09 HELSINGBORG
Sweden

EMPLOYMENT OPPORTUNITIES

University of Cincinnati

The Department of Civil and Environmental Engineering at the University of Cincinnati invites applications for a tenure-track position at the assistant or associate professor level in environmental engineering. Research expertise in the area of biological treatment processes is preferred, although outstanding candidates in all environmental areas will be considered. Responsibilities include: teaching at both the graduate and undergraduate level; the development of a strong research program; and advising of students at the B.S., M.S. and Ph.D. levels. The anticipated starting date is early 1990. The Environmental Engineering Program has recently expanded to include 13 full-time faculty members and 54 full-time graduate students in the areas of water, wastewater, hazardous waste and air pollution control. Unique opportunities exist for research interactions with three U.S. EPA research facilities in Cincinnati. Applications received before **October 31, 1989** will be given priority, but the search will continue until the position is filled.

Applicants should send their resumes and the names of three references to:

Dr. R. Scott Summers
Search Committee Chairperson
Department of Civil and
Environmental Engineering
University of Cincinnati
Cincinnati, OH 45221-0071

UC is an affirmative action/equal opportunity institution and in that spirit, we encourage applications from a broad spectrum of people including women and members of ethnic minorities.

Georgia Institute of Technology

The School of Civil Engineering has reopened its search for a faculty member 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 B.C.E., M.S. and Ph.D. students. Applicants should possess a doctorate in Civil or Environmental Engineering, or an equivalent, by the time of appointment and 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 3 references to:

Prof. 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.

University of North Carolina at Charlotte

The Department of Civil Engineering, The University of North Carolina at Charlotte invites applications for a possible tenure track position in an interdisciplinary biotechnology program. Candidates with a background in biotechnology with research and practical experience in industrial fermentation /bioprocess engineering are preferred. The successful candidate will work with an interdisciplinary team of faculty from the Chemistry Department, Biology Department, and College of Engineering. This tenure track position at the Assistant or Associate Professor level requires a doctoral degree or near completion of same in civil engineering or a closely related field. Duties include undergraduate and graduate teaching, student advising, pursuit and development of sponsored research, and participation in ongoing research.

Good communication skills in both spoken and written English are necessary and University teaching and/or research experience is desirable. The position will be available August 16, 1990. Applications must be received by **March 1, 1990** to receive full consideration. Applicants should send a complete resume including publications, transcript or list of courses included in graduate program and the names, addresses and telephone numbers of four references to:

Dr. L. Ellis King, Chairman
Department of Civil Engineering
The University of North Carolina
at Charlotte
Charlotte, NC 28223.

The University of North Carolina at Charlotte is an equal opportunity/affirmative action employer.

Washington State University

Washington State University, Department of Civil and Environmental Engineering. Applications and nominations are invited for two tenure-track faculty positions in environmental engineering, available effective August 16, 1990.

One position is at the associate or full professor level and the candidates for this position are expected to have a Ph.D. and an outstanding teaching and research record in the areas of biological wastewater

treatment processes and design with emphasis on industrial/hazardous/solid wastes.

The second position is at the assistant or associate professor level and requires a Ph.D. and a strong potential/record for quality teaching and research in the area of physical/chemical unit operations /processes/design with emphasis on water, as well as air quality problems.

Both positions require demonstrated communication and interpersonal skills. Professional registration desirable.

Salary is commensurate with qualifications and experience. Applicants must send a letter of interest, a resume, and the names, addresses, and phone numbers of at least five references. Applications will be considered until **January 26, 1990** for the first screening. The applications received after January 26, 1990 will only be considered if the first screening does not result in recruiting a person. Applications should be sent to:

Dr. Rafik Itani, Chair
Department of Civil and
Environmental Engineering
Washington State University
Pullman, WA 99164-2910.

Washington State University is an EO/AA educator and employer. Protected group members are encouraged to apply.

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