



Sustaining Membership in AEEP

Last year the AEEP membership approved a change in the bylaws which created a Sustaining Membership category for those not affiliated with universities but who are interested in Environmental Engineering education and would like to assist in strengthening university programs devoted to this area. The primary objective for establishing this type of membership is to improve communication between Environmental Engineers in universities and those in practice, with a resulting increase of cooperative efforts in teaching, research, and practice by AEEP members and practicing Environmental Engineers.

The help of every AEEP member in making the availability of this membership category known to Environmental Engineers in consulting engineering firms, industry, equipment manufacturers, and governmental agencies is needed. An application form for Sustaining Membership is included at the end of this issue of the Newsletter. Please pass this on to whomever you believe may be interested in joining. As noted on the form, both individuals and organizations may become Sustaining Members with the annual dues being \$250 per year. An organization may apply for more than one sustaining membership if desired.

New Sustaining Members

AEEP is pleased to welcome the first two sustaining members of the Association:

Engineering Science, Inc
Procter and Gamble Company

AEEP is pleased that they are joining us in our endeavors to improve Environmental Engineering education and research.

Expanded Distribution of AEEP NEWSLETTER

Once again the NEWSLETTER'S first issue of the new year is being distributed to personnel outside the AEEP who are involved in environmental issues. It is hoped that the expanded distribution of the NEWSLETTER will give AEEP increased visibility and will allow the association to inform a wider audience of our activities and accomplishments. Anyone wishing to submit articles of general Environmental Engineering interest to future issues should send the information to the NEWSLETTER editor.

AEEP: A Brief Description

AEEP, which was formed in 1963, has the objective of advancing Environmental Engineering education by pooling the efforts of Environmental Engineering educators in the Universities represented by its membership.

AEEP is increasing its efforts to improve communications with and develop closer relations between Environmental Engineers in Universities and those in practice. Beginning this year, a Sustaining Membership category has been created for those not affiliated with Universities but who are concerned about Environmental Engineering education and wish to assist in strengthening University programs devoted to this area. In addition to developing stronger bonds between those engaged in teaching and those engaged in practice, some specific AEEP activities which could be of interest to those practicing Environmental Engineering are:

- *Register of Graduate Programs:* This register, which is periodically updated, includes detailed information on Environmental Engineering programs in North America. It could serve as a valuable source of information for practicing Engineers in locating students for employment and finding faculty with expertise in specific technical areas. A listing of Sustaining Members will be included in the next edition of the register to assist students in locating employment in the Environmental Engineering field.
- *Annual Workshops and Seminars:* These are conducted annually at the Purdue Industrial Waste Conference and Conferences of the American Water Works Association and Water Pollution Control Federation. The topics covered, such as stream modeling, anaerobic digestion, chemistry of coagulation, etc., should be of value to all Environmental Engineers in their professional activities.
- *Environmental Engineering Education Conferences:* These are held at 6 to 8 year intervals and have the objective of examining the current status of Environmental Engineering education and planning for the future. The input of practicing Environmental Engineers to these Conferences, as prospective employers of students, is needed. To facilitate this input, the Conferences are organized in cooperation with the American Academy of Environmental Engineers.
- *Research Needs Conferences:* These conferences, which have been supported by the National Science Foundation, have the objective of examining the status of Environmental Engineering research and pointing out areas where additional research is needed. This could be of substantial value to practicing Engineers in their professional activities. Also, the help of practitioners is needed

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in establishing these research needs. The Conferences also present an opportunity to explore areas in which professors and students can engage with practicing Engineers in cooperative research projects.

- **AEEP Newsletter.** AEEP publishes a newsletter three times each year. It reports on AEEP's activities, national and international activities of importance to the membership, and provides a classified section listing employment opportunities for graduate students and faculty. The names of Sustaining Members will be listed in the newsletter and input from Sustaining Members as to how the newsletter could be modified to better serve their needs will be welcomed.
- **Distinguished Lecturers:** Each spring, AEEP selects a distinguished Environmental Engineer to present lectures at selected Universities throughout the country. The speakers alternate between those from other countries and North America. Sustaining members are welcome to attend these seminars whenever the speaker is scheduled for their local Universities.

AEEP hopes that practicing Environmental Engineers will become Sustaining Members of AEEP and participate with those of us in Universities in contributing to and helping shape the future of Environmental Engineering education. More details on the Sustaining Membership program can be

obtained from the Officers and Board Members of AEEP who are listed on the last page of this newsletter.

Other services and activities of AEEP include:

- **Teaching materials** such as the "Water Chemistry Laboratory Manual," "Environmental Engineering Unit Operations and Unit Processes Laboratory Manual," and "Aquatic Microbiology Laboratory Manual"
- **Policy statements** to the U.S. Congress on legislation affecting Environmental Engineering programs
- **Research Awards** for doctoral dissertations in cooperation with Engineering Science Inc. and for outstanding research publications
- **Input to other organizations** including an AEEP delegation on the USANC for representation of the United States to the IAWPRC and an elected member on the board of directors of the AAEE
- **Enrollment survey** which includes numerical data on graduate enrollment trends in the profession
- **Membership Meetings** held at the annual WPCF Conference and the Purdue Industrial Waste Conference, as well as special sessions at the Annual AWWA Conference.

AEEP members are generally on the faculties of the educational and research programs that have produced, and are producing most of the Environmental Engineers in practice today. An application for AEEP membership is included in this issue.

AEEP NEWS AND ANNOUNCEMENTS

AEEP Workshop at Purdue

The annual AEEP Workshop before the Purdue Industrial Waste Conference will be held on Monday, May 12, 1986 from 8:30 am to 5:00 (with a break for lunch). The general topic of the workshop is "Engineering the Biofilm Environment". The speakers selected to give the presentations are: W. G. Characklis (Montana St. Univ.), S. Hermanowicz (Univ. of California-Berkeley), and J. A. Mueller (Manhattan College). Registration fees for the workshop will be \$30 for AEEP members, \$90 for nonmembers, and \$10 for students. For more information contact:

William G. Characklis
Institute for Biological and Chemical Process Analysis
Montana State University
Bozeman, Montana 59717
(406) 994-6135

The specific lecture titles and brief abstracts follow:

1. **Biofilms: A Process Description (Characklis)**
Processes contributing to biofilm accumulation will be described along with factors influencing their rate. In addition, factors influencing microbial activity within the biofilm will be discussed. Properties of the biofilm contributing to activity and structure of biofilms will be addressed.
2. **Progress Report: IAWPRC Task Group "Modelling of Biofilm Systems" (Characklis)**
The goals of the Task Group are to assess the state of biofilm modelling, provide a framework for biofilm reactor modelling, and make recommendations for research and development necessary to achieve useful and practical models.

3. **Practical Application of Mass Transfer to Trickling Filters (Mueller)**

This will incorporate the liquid film equations with mass transfer across the gas-liquid and liquid-biofilm interfaces with molecular diffusion and simultaneous reaction within the biofilm. Two diffusing species will be considered, both oxygen and organic substrate (BOD, COD). A simplified modification for use with high strength wastes will be presented with pilot scale data and design applications.

4. **Practical Application of Mass Transfer to Rotating Biological Contactors (Mueller)**

The additional complexity of a rotating biofilm is incorporated in this system. Analysis of full scale data for both carbon oxidation and nitrification with five diffusing species will be presented. The incorporation of sequential nitrification/denitrification with depth in the biofilm will be highlighted. Practical applications of RBC system design from model analysis will be presented.

5. **Fluidized Bed Technology and its Application in Biological Treatment Processes (Hermanowicz)**

An overview of basic phenomena related to fluidization (expansion, mixing of liquid and solid phases). Reactor modelling, biofilm development, substrate removal in fluidized beds and mass transfer implications.

6. **Distribution of Biomass in a Fluidized Bed: Effects on Reactor Performance (Hermanowicz)**

More detailed discussion of solids mixing and segregation in the fluidized bed. Effects of biomass distribution on substrate removal efficiency. Solids recycled and biomass wasting.

AEEP Annual Membership Meeting at Purdue

The annual AEEP Luncheon at the Purdue Industrial Waste Conference will be held Tuesday, May 13, 1986 from 12:00 to 1:00 pm. The luncheon will be a cash buffet - no advance reservations will be taken. A short business meeting chaired by AEEP President John F. Andrews will follow the luncheon.

AEEP-AWWA Seminar Program

The AEEP Seminar at the Annual AWWA Conference in Denver is scheduled for Monday evening, June 23rd. Watch the AWWA Program for the exact time and place. The seminar is entitled **THE REGULATORY PROCESS FOR SETTING DRINKING WATER STANDARDS**. The featured speakers will be Michael Cook, Director of the Office of Drinking Water, U.S. EPA, who will give an overview of the regulatory process, and Joe Cotruvo, Director of the Criteria and Standards Division in the Office of Drinking Water, U.S. EPA. Mr. Cotruvo's topic will be "Risk Assessment and Control Decisions for Protecting Drinking Water Quality." For more information contact the session moderator:

Mike Cavanaugh
James M. Montgomery Engineers
501 Lennon Lane, Suite 200
Walnut Creek, CA 94598
(415) 933-2250

Environmental Engineering Education Conference

The Fifth Conference on Environmental Engineering Education will be held at Michigan Technological University, Houghton, Michigan, from July 21-23, 1986. The Conference will deal with Environmental Engineering education at both the advanced undergraduate and graduate levels; however, special attention will be given to the M.S. level as preparation for research and professional practice. The focal issues of the conference will be:

- (1) Role of Computers in Environmental Engineering Education and Research
- (2) Integrated Air, Water, Land Approaches in Environmental Engineering
- (3) Role of Design and Operation in Environmental Engineering

Copies of the issue papers will be distributed to preregistrants before the conference. The format of the conference will include summaries and initial discussions on the first day, Task committee meetings on the second day, and a plenary session to discuss and vote on the Task committee recommendations on the third day. For further information or registration materials contact:

Dr. C. Robert Baillod, Conference Chairman
Civil Engineering Department
Michigan Technological University
Houghton, MI 49931
(906) 487-2530

Best Doctoral Thesis Award Change

Engineering Science, Inc., has decided to give their award for the best Ph.D. dissertation in Environmental Engineering on a biennial basis. The next announcement of submission procedures will be made one year from now.

Save on Travel to the Environmental Engineering Education Conference

By now, all AEEP and AAEE members should have received the program announcement for the Education Conference. That brochure points out that Houghton is served by Republic Express (Simmons) Airlines with six daily flights from Detroit and Minneapolis, and that Republic and Republic Express are offering a 25% discount from regular fares for travel to and from the conference between July 17 and July 26. Registrations must be made through the Republic Convention Desk (1-800-438-1111). The discount code for the conference is MIC 222. Conferencees travelling under this special rate must have proof of registration while travelling and therefore should preregister. Those arriving on Saturday, may be able to save additional money by qualifying for super saver rates.

The table below summarizes some very approximate air fares for travel to Houghton from various points via Republic and Republic Express. Significant savings can be realized by taking advantage of the conference and super saver rates.

TO HOUGHTON, ROUND TRIP				
FROM	Regular Fare	Republic Conf. Rate	Super Saver*	Ult. Super Saver*
NY City	\$580	\$435	\$370	\$208
Atlanta	\$600	\$450	\$400	\$218
L.A.	\$940	\$705	\$518	\$338
Mpls	\$238	\$178	\$169	\$139
Chicago	\$420	\$315	\$253	\$183

* Requires stay over Saturday Night and early purchase; Availability may be limited.

Engineering Science, Inc./AEEP Award Best Doctoral Thesis Award

The 1985 Engineering Science, Inc./AEEP Award for the Best Doctoral Thesis Relevant to Environmental Engineering Practice was given to Arthur L. Baehr and his advisor, Professor M. Yavuz Corapcioglu, of the University of Delaware. Dr. Baehr's dissertation was entitled "Immiscible Contaminant Transport in Soils with an Emphasis on Gasoline Hydrocarbons." The award was presented by Dr. Davis Ford, Division Vice President of Engineering Science, Inc. at the October, 1985 AEEP Luncheon at the annual WPCF conference in Kansas City. In the picture below are (left to right): Dr. Ford, Dr. Corapcioglu, and Dr. Baehr.



1985 AEEP Distinguished Lecturer Tour

Professor Donald J. O'Connor, the AEEP 1986 Distinguished Lecturer, will be presenting lectures on: (a) Mathematical Model of Water Quality - Theory and Application and (b) Mass and Momentum Transfer at Environmental Interfaces. His itinerary will be:

- Feb. 24 Carnegie-Mellon
25 University of Michigan
26 Illinois Institute of Technology
27 Iowa State University
- Apr. 1 Univ. of North Carolina-Chapel Hill
2 Georgia Tech
3 University of Texas-Austin
29 University of Colorado-Boulder
30 Stanford
- May 1 California Institute of Technology

Professor O'Connor's lecture at Clarkson College has not been scheduled yet.

AEEP Outstanding Publication Award

The 3rd annual AEEP OUTSTANDING PUBLICATION AWARD to a paper which demonstrates significant education contributions and research accomplishment that have "stood the test of time" was presented to Dr. Perry L. McCarthy and Dr. Alonzo W. Lawrence for their paper entitled "Unified Basis for Biological Treatment Design and Operation" which appeared in the *Journal of the Sanitary Engineering Div., ASCE* in 1970. The award citation said, in part, "Your paper had, and continues to have, a dramatic impact on the approach to design and operation of biological treatment systems, as well as subsequent research of these systems. Its value to environmental engineering education is immeasurable and is distinguished by being the first award in the biological treatment area." The award was presented at the AEEP luncheon meeting at the October, 1985 WPCF Conference in Kansas City.

Nominations for AEEP 1986 Outstanding Publication Requested

Nominations are requested for the AEEP 1986 Outstanding Publication Award. This award is given annually to a landmark paper that has had a lasting influence on the environmental engineering field. Each nomination should be accompanied by a statement indicating how the paper has influenced the field and why the nominator thinks the paper is in the landmark category. Authors need not be members of AEEP.

Send all nominations and accompanying statements to: Dr. James M. Symons, Chairman, Outstanding Publication Award Committee, Department of Civil Engineering, University of Houston-University Park, Houston, Texas 77004. The deadline for nominations is June 1, 1986. The award will be presented at the 1986 WPCF Conference.

News of AEEP Members

Thomas M. Keinath was awarded the Walter L. Huber Civil Engineering Research Prize at the ASCE convention in Detroit last fall. The Huber Prize is awarded to ASCE members for "notable achievement in research related to civil engineering." Professor Keinath was honored for his research on the fundamental principles of clarification and thickening in the activated sludge process.

Education Conference Travel Stipends Available for Junior Faculty

AEEP and the Education Conference Planning and Steering Committee are pleased to announce the availability of limited travel stipends intended to encourage the participation of junior faculty in the forthcoming Environmental Engineering Education Conference, July 21-23, at Michigan Tech. These stipends are supported by \$2,000. from the NSF Grant Budget matched by \$2,000. contributed by AEEP. It is intended to award approximately 20 grants at roughly \$200. each. Membership in AEEP is not necessary to receive a travel grant. For further information contact Bob Baumann at Iowa State (515-294-4975).

DUPLICATE AS NECESSARY

Travel Grant Application

for

Fifth Conference on Environmental
Engineering Education
Houghton, MI
July 21-23, 1986

Applicant Name: _____

University: _____

Department: _____

Address: _____

City/State/Zip: _____

Soc. Sec. No.: _____

Highest Degree Held: _____

Length of Time in Present Position: _____

Estimated Travel Expense: _____

Telephone No.: _____

Travel Grant Request: (Please describe the travel assistance that you request and how it would help you make it to the Conference)

Signed: _____

Return to: E. Robert Baumann, Ph.D., P.E.
Vice President, AEEP
496 Town Engrg. Bldg.
Iowa State University
Ames, IA. 50011

Library Donations

Dr. Gordon McCallum, former Deputy Surgeon General of the U.S. Public Health Service, would like to donate his personal copies of the Transactions of the American Society of Civil Engineers to a University Library. His collection consists of 40 bound volumes covering the period from 1938 to 1968. Dr. McCallum will pack and ship these with the only cost to the recipient being the shipping costs.

Anyone desiring to obtain these Transactions for their University Library may contact Dr. McCallum at the address given below:

Dr. Gordon McCallum
3533 Twin Branches Drive
Silver Spring, MD 20906

Treasurer's Report

The following financial statement summarizes the condition of AEEP as of January 8, 1986. Please direct any questions you have about the association's finances to our secretary-treasurer (Bill Batchelor, Civil Engineering, Texas AM University, College Station, Texas, 77843).

An important conclusion that can be drawn from this statement is that the downward trend in net worth has been completely reversed in 1985. The change in net worth for 1985 relative to 1984 is due primarily to reduced expenditures for workshops and publications. Large expenditures for publications were necessary in 1984 in order to print the register of graduate programs.

SUMMARY FINANCIAL STATEMENT Yearly Report - 1985

Fund	Initial Balance (1-2-85)	Income	Expenses	Transfers	Final Balance (1-8-86)
PUBLICATIONS	2,167.34	3,550.63	1,334.15	-2,000.00	2,383.82
SAVINGS	17,762.43	1,217.04	7.06	-6,035.15	12,937.26
GENERAL	788.43	20,118.10	15,311.27	8,035.15	13,630.40
office		0	937.76		
newsletter		0	1,214.72		
publications		285.97	828.95		
board mtg.		0	3,343.86		
dist. lect.		6,930.00	6,123.00		
workshops		0	91.46		
committees		0	810.83		
govt. act.		0	0		
dues (member)		11,922.50	0		
dues (to USANC)		0	0		
awards		0	983.91		
labels		295.00	58.84		
interest		543.49	0		
other		141.14	917.94		
TOTAL	20,718.19	24,885.77	16,652.48	0	28,951.48
Total worth January	1986	28,951			
	1985	20,718			
	1984	22,862			
	1983	23,303			
	1982	24,116			

GENERAL NEWS

The Water Engineering Research Laboratory, EPA

The U.S. Environmental Protection Agency (EPA) is charged by Congress with protecting the Nation's land, air, and water systems. Within EPA's Office of Research and Development is the Water Engineering Research Laboratory (WERL)—that part of EPA concerned with:

- preventing, treating, and managing municipal wastewater discharges:
 - treatment levels for sludge before ocean dumping and for wastewater discharge through ocean outfalls
 - innovative and alternative technology
 - small wastewater flows
 - sludge processing, conversion, and land application
 - plant operation, design, and upgrading
 - evaluation of new treatment processes
 - toxic pollutant controls at POTW's
- establishing practices to control and remove contaminants from drinking water and to prevent its deterioration during storage and distribution:
 - control and removal of physical and chemical contaminants, including organics, inorganics, and particulates
 - prevention of water quality deterioration during storage and distribution
 - control and prevention of microbiological contaminants
 - improvement of water supply and treatment management practices

- assessing the nature and controllability of releases of toxic substances to the air, water, and land from manufacturing processes and subsequent product uses:
 - evaluation of industrial wastewater treatment methods for water quality standards
 - development of toxicity reduction protocols and manuals for industries not yet addressed
 - development and evaluation of protective clothing and equipment for use in preventing pesticide exposure
 - alternatives to mitigate chemical release and exposure
 - development of predictive capabilities to assess PMN's for new chemicals
 - assessment of physical, chemical, and biological techniques and devices for genetically engineered organisms.

The Water Engineering Research Laboratory, which was reorganized in 1984 to include these activities, has a 1986 extramural budget of \$10.7 million and a staff of 103. Recent major accomplishments include treatment guides for using GAC in drinking water treatment, sludge stabilization and disinfection, control of trihalomethanes in drinking water, and energy savings in municipal wastewater treatment plants. In addition to its extramural research program and laboratory-scale inhouse research, WERL manages and operates a large test and evaluation facility for municipal and industrial wastes

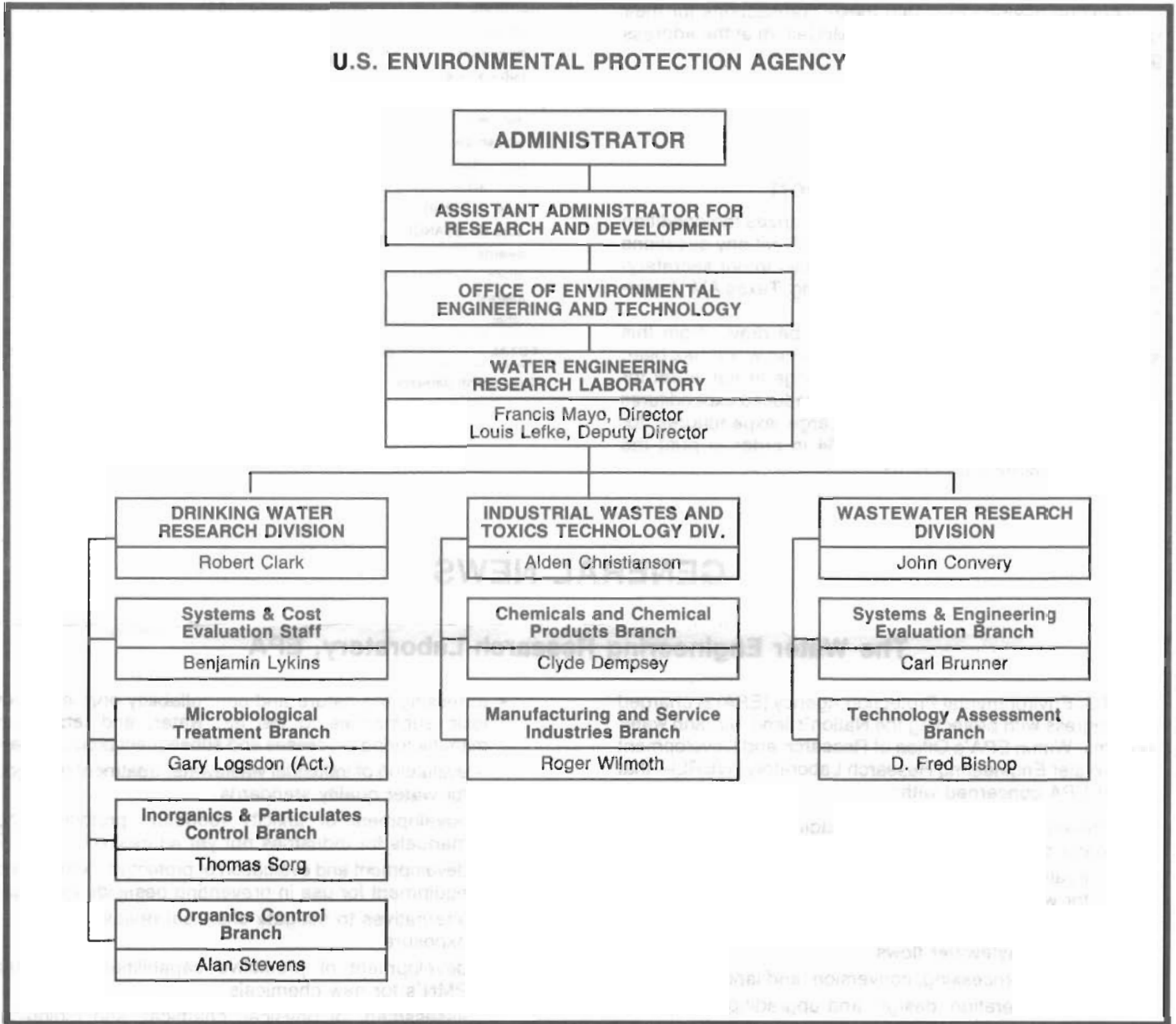
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and pilot plants for drinking water organics and inorganics research.

The final product of the research funded by the Laboratory in these subject areas is the Project Report (available only from the National Technical Information Service). Project Summaries synopsizing the full report are, however,

regularly available to the technical community. To be placed on the Laboratory's mailing list, write the Technical Information Activity Office, Room 482, Water Engineering Research Laboratory, Cincinnati, Ohio 45268.

An organizational chart of the Water Engineering Research Laboratory is presented below.



Cuts in Federal Research Funding

The Gramm-Rudman bill could result in significant cutbacks in federal funding of environmental research. As each agency looks for a way to cut 4.3 percent from its budget, research dollars become quite vulnerable. AEEP's Legislative Analysis Committee will be mailing the members a document "Protecting Our Environment: The Need for Exploratory Research". We ask that you use this as ammunition when writing to congressmen, senators or key administrators in federal agencies. Please make every effort to be heard at this critical time.

Francis A. DiGiano
Chairman, Legislative Analysis Committee

NSF Awards - FY 1985

A listing of awards made by the NSF Environmental Engineering Program for FY 1985 is now available. A copy may be obtained from:

Dr. Ed Bryan
Program Director
National Science Foundation
1800 G Street, N.W.
Washington, D.C., 20550

The listing includes 70 awards totalling \$4.5 million.

AEE CERTIFICATION

The Association of Environmental Engineering Professors is a sponsoring organization of the American Academy of Environmental Engineers (AAEE). Each sponsoring organization of the Academy may submit a list of not more than five (5) of its qualified members for consideration by the AAEE Board for certification.

The candidates must meet the following AAEE criteria:

1. BS in engineering or a related field
2. Professional engineer's license.
3. Professionally engaged on a full-time basis.
4. Must have at least fifteen (15) years of environmental engineering experience in one or more of the specialty fields. Eleven (11) of the fifteen (15) years shall be in responsible charge, which work must include active participation with responsibility primarily in one or more fields of environmental engineering.

The candidate applications will be reviewed to see that all criteria are met and then presented to the AEEP Board for approval. The Board approved applications will be submitted with a letter of transmittal to AAEE for consideration by the Academy Review Committee and Board.

Any active AEEP member in good standing who meets the above criteria is eligible for nomination. All applications should include letters of endorsement from three AEEP members who are familiar with the candidate's achievements. Consideration shall be given to the record of service to AEEP.

Note that any AEEP members meeting the criteria may apply directly to the Academy for membership, and acceptance is conditional on an oral examination. In addition, any members that do not have the experience noted above but have 8 or more years experience in this field can apply directly to the Academy, and acceptance is conditional on a **written** and an **oral** examination. The Academy address and telephone number is:

American Academy of Environmental Engineers
132 Holiday Court, Suite 206
Annapolis, MD 21404
(301) 266-3311

Qualified AEEP members wishing to be sponsored as a nominee of AEEP or desiring more information should apply directly to the AEEP-AAEE Trustee, Frederick G. Pohland, School of Civil Engineering, Georgia Institute of Technology, Atlanta, GA 30332.

AAEE considers applications only once a year. Application deadlines are:

April 1 AEEP nominee applications received by Trustee
April 8 Reviewed by AEEP Committee
May 8 Received by AAEE Board
May 22 Received by AEEE

**APPLICATION FOR SUSTAINING MEMBERSHIP
IN THE
ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS (AEEP)**

APPLICANT CATEGORY (check one)

- Consulting Engineering Firm
- Industry
- Government Agency
- Equipment Manufacturer
- Individual

NAME OF ORGANIZATION _____

ADDRESS _____

_____ (City) _____ (State) _____ (Zip)

PHONE _____

CONTACT PERSON _____

TITLE _____

BRIEF DESCRIPTION OF ORGANIZATION'S ACTIVITIES AND RELATIONSHIP TO THE ENVIRONMENTAL ENGINEERING PROFESSION:

NUMBER OF MEMBERSHIPS (@ \$250 ea.) _____

AMOUNT ENCLOSED _____

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Association Of Environmental Engineering Professors

NEWSLETTER