

**American
Association
of
Professors
in
Sanitary
Engineering**

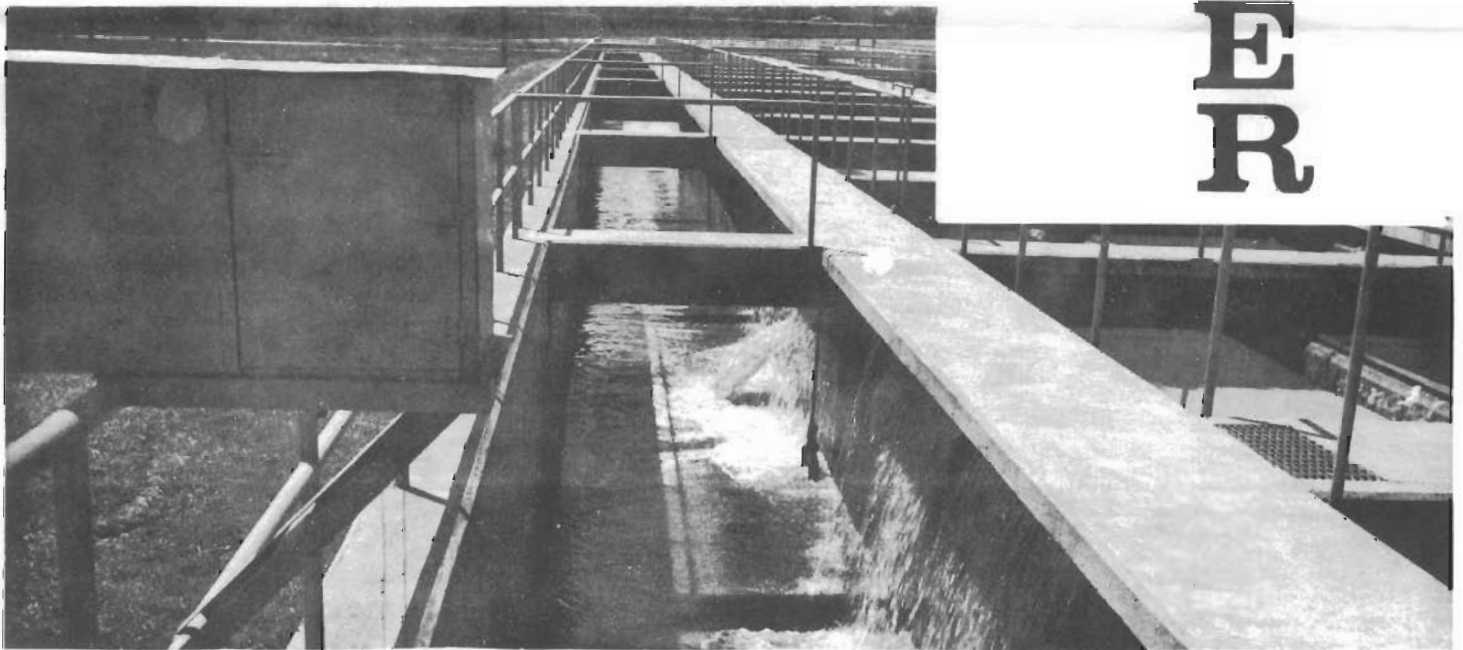
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Water Resources Center

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NEWSLETTER



APRIL 1972

VOLUME 7, NUMBER 3

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A.A.P.S.E. ACTIVITIES AT PURDUE

All AAPSE members annually look forward to the Purdue Conference during the first week of May. Two activities sponsored by AAPSE will be held on Tuesday, May 2, 1972.

A.A.P.S.E. Seminar

Topic: How Should A Design Course Be Taught
 Time: 8:00 to 9:15 am (Tuesday Morning)
 Place: Room 310 Stewart Center
 Participant: Carl Burkhead
 Richard Dick
 Walter O'Brien
 and others

A.A.P.S.E. Open Meeting

Time: 8:15 pm (Tuesday Evening)
 Place: Room 214 Stewart Center
 President Austin expects to announce shortly confirmation of a speaker from the EPA Manpower program.

LEGISLATIVE ANALYSISAmendments to the Federal Water Pollution Control Act

An amended version of H.R. 11896 was introduced in the House of Representatives on March 11th, 1972, and was passed March 29 by a vote of 380 to 14. Presuming that the Senate does not adopt the House version, a Conference Committee will resolve the differences in the House and Senate bills. The Senate version of the bill is S2770, which was passed several months ago.

Both bills to amend the present Federal Water Pollution Control Act authorize the Administrator of the Environmental Protection Agency to make grants for training and research. Some emphasis is placed on training in aquatic ecology and study of river systems. In the House Bill (Section 104), "The Administrator is authorized to make grants to colleges and universities to conduct basic research into the structure and function of fresh water aquatic ecosystems, and to improve understanding of the ecological characteristics necessary to the maintenance of the chemical, physical, and biological integrity of freshwater aquatic ecosystem." and "The Administrator is authorized to make grants to one or more institutions of higher education (regionally located and to be designated as 'River Study Centers') for the purpose of conducting and reporting on interdisciplinary studies on the nature of river systems, including hydrology, biology, ecology, economics, and relationship between river uses and land uses, and the effects of development within river basins on river systems and on the value of water resources and water development activities. No such grant in any fiscal year shall exceed \$1,000,000."

The Safe Drinking Water Amendment to S1478

On March 20th, Professor E. Robert Baumann made a presentation to the Senate Commerce Committee on behalf of AAPSE pertaining to the Safe Drinking Water Amendment. His remarks have previously been circulated to the membership by President Austin.

Reported by R. Dick

CUTBACK IN EPA PROFESSIONAL TRAINING GRANTS PROGRAM

Undoubtedly, most everyone in AAPSE knows that EPA has requested a reduction in their training grants budget for fiscal year 1973. This reduction has caused considerable concern among educators and it has generated considerable correspondence between EPA officials, AAPSE members, and governmental representatives. The following correspondence typifies and summarizes the major viewpoints and positions that have been expressed:

EPA Position

ENVIRONMENTAL PROTECTION AGENCY
Washington, D. C. 20460

Honorable Mike Mansfield
United States Senate
Washington, D. C. 20510

Dear Senator Mansfield:

Thank you for your recent inquiry about funding levels for the Professional Training Grants Program of the Environmental Protection Agency.

The Office of Management and Budget has not withheld funds for graduate training programs of EPA in fiscal year 1972 as indicated in your correspondence. In fact, all funds for these programs in fiscal year 1972 were made available for obligation soon after the funds were appropriated by Congress.

A request for \$7.4 million for professional training grants is included in the 1973 budget. This is \$3 million below last year's level. This decline will not, of itself, force cancellation of existing grants. However, all grants are subject to periodic review and assessment, and choices will be made between maintaining funding levels on existing grants, renewing expiring grants, and starting new ones.

We believe the requested 1973 funding level is adequate because:

- There are many trained scientists and engineers currently unemployed or underemployed who are available to enter environmental fields.
- Many more universities offer graduate training programs in environmental areas and more students are entering these fields now than in the past.
- EPA, NSF, and other agencies support faculty and students through environmental research project grants and contracts at higher levels than in the past.

Therefore, the stimulus of a larger EPA training grant program is less needed now than in the past, and of somewhat lower priority than other pressing needs within the EPA 1973 budget totals.

Thank you for your interest in this matter.

Sincerely yours,

Thomas E. Carroll, Assistant Administrator
for Planning and Management

UCOWR Position

UCOWR Takes A Stand On Training Grants Cutback

In a recent letter David J. Allee, Chairman of UCOWR, addressed the following remarks to Congressman Howard W. Robison.

"Thank you for the information provided in your letter of March 9, 1972 transmitting information received from the Environmental Protection Agency regarding funding levels for E.P.A. Training Grants Programs.

We are concerned about the FY 1973 \$3 million reduction in training grant funds below FY 72. Justification for the lower FY 1973 funding level is contained in three points made by E.P.A. Assistant Administrator Carroll in his letter to you dated February 28, 1972. Mr. Carroll's statement and our comments are provided below.

There are many trained scientists and engineers currently unemployed or underemployed who are available to enter environmental fields.

Comment: If we accept the facts about the availability of unemployed or underemployed trained scientists and engineers, the conclusion that these persons are automatically available for entering the environmental field is not acceptable. The most efficient way in which many of these trained persons can enter the environmental field at levels reasonably commensurate with their experience would be to undertake additional specialized training. This can best be accomplished rapidly in qualified institutions having training grant programs.

Many more universities offer graduate training programs in environmental areas and more students are entering these fields now than in the past.

Comment: This may be so. Yet the bulwark of training excellence continues to reside in the core of institutions that have established sound, broad based training programs to meet emerging needs. In fact, the very presence of these institutions has made the formation of the new institutions possible. Further, it is not at all clear that even with the present level of activity we shall meet the nation's needs, much less with the lower level of activity that funding cuts imply.

EPA, NSF, and other agencies support faculty and students through environmental research project grants and contracts at higher levels than in the past.

Comment: While this may be so, it is also concluded (1) that environmental concerns are at a much higher order of magnitude than in the past and are growing rapidly; and (2) that research grants and contracts cannot provide an adequate breadth nor the continuity for an effective training program.

We believe, therefore, that an urgent national need is to insure the maintenance of an effective training grant program within the E.P.A. structure. Accordingly, we hope you will find it possible, whatever the eventual funding for this year, to have the E.P.A. appropriation language (as contained in the appropriation report) for FY 1973 reflect the universities concern for this national need and that the Congress, through this procedure, make clear to E.P.A. its interest in continuing and strengthening the training grants program."

EDITORIAL COMMENT

Federal Training Grants Cutbacks Could
Cripple Professional Education

The Office of Management and Budget (OMB) has suggested a \$4.7 million reduction in EPA training grants awards. About 1 million of this amount would be eliminated from the professional training activities of the Office of Water Programs thereby curtailing water programs initially by about 25%. It is felt that this proposed reduction would be the first step in the rapid phase out of the entire EPA professional training grant and research fellowship program.

Educators have been quick to voice fears that the phase out of professional training grant programs is entirely inconsistent with the estimates of professional manpower needs (18,400 in the water quality area over the next 5 years) stated by the federal agencies and prominent political figures of both parties. Moreover, it is clear that a precipitous phase-out would further cripple environmental engineering programs in U. S. universities. Most of these university programs have already suffered severe setbacks, first, owing to the decline in federal support for university research and, more recently, at the hands of state legislatures, many of which have sharply cut university appropriations across the board.

An assessment of the effectiveness of the water quality professional training program seems in order. In 1962, the program provided 67 traineeships at 16 institutions. This increased to 932 traineeships in 82 institutions by 1971. Initially, 50% of the training grant support went for facilities, staff and equipment. Currently, 81% of the monies go for student support.

Less than 1% of the graduate trainees (principally M.S. graduates) have left the environmental field and less than 1% are unemployed. In the decade the program has operated, the graduate trainees have entered the following areas of practice:

- Consulting - 27%
- Private industry - 17%
- Teaching and research - 19%
- Federal government - 19%
- State government - 13%
- Local government - 5%

The program has clearly been the dominant influence over the past decade in facilitating the training of professionals in the water quality field. It appears that all segments of the profession have benefited from the program.

One is reluctant to call for the continuance of any federal program at a time when economics are required in all segments of society. However, if environmental pollution control does enjoy a high national priority, and if the demand for adequately trained professionals in the field is even a small fraction of the EPA estimates, it does not seem reasonable to cut off the remaining resources which are keeping environmental engineering programs alive, at least until alternative methods for financing these programs can be devised.

John T. O'Connor
Editor

Comments from an Educator and Member of the Newsletter Committee

Montana State University
 Department of Civil Engineering
 & Engineering Mechanics
 College of Engineering

March 20, 1972

Honorable Birch Bayh
 United States Senate
 Washington, D. C. 20510

Dear Senator Bayh:

Your reply to my letter about budget cuts for EPA training grants is deeply appreciated -- the more so because I realize you must have a very full schedule. However, I must say the explanation from Thomas E. Carroll from Planning and Management of the EPA is lacking in thoughtfulness and accuracy.

In this report these statements were made: (1) there are many unemployed engineers available for environmental work. (2) More universities offer graduate training than in the past. (3) EPA, NSF, and others support more research grants than in the past.

I challenge all these statements. First of all, an unemployed aerospace engineer is not a candidate for work in the environmental field without at least a year of training in environmental engineering. In this respect he is little better than a recent graduate with a B.S. degree. Environmental engineers need biology, chemistry, unit operations used in sanitary work, and a broad coverage of factors relating to the environment if they are not to compound mistakes already made. Secondly, while more universities offer environmental work now than did so ten years ago, there certainly are not enough to do the billions of dollars worth of work contemplated in the next few years. Furthermore, the students now need support just as badly as did students in the past. Thirdly, it is not true that research grants to universities by EPA and NSF are increasing. As a matter of fact, they are increasingly more difficult to obtain. One cannot maintain a viable graduate program where financial support for students is so uncertain. It takes at least a year (even when things go well) for one to obtain a research grant. This eliminates the possibility of a student who seeks a Master's degree in a one year period to obtain any kind of support for a problem of his own choosing. Of course, if one has a very large grant, he can support three or four graduate students, but they will have to work on research which may not be interesting nor even particularly fruitful insofar as their educational objectives are concerned. But the worst feature of depending upon research grants is the uncertainty of obtaining them from year to year. These fluctuations in support cannot make for adequate graduate education in this country.

Any viable industry figures it must put about 5% of its gross sales into research to stay alive. On this, or on any remotely comparable basis, the U.S. Government would go broke! Considering the vast sums of money that are to be spend for pollution control, it passes belief that we should be so stingy with the tiny percentage of dollars spent on university research.

Probably Ralph Nader did our universities almost irreparable harm when he stated that in all the research done under the auspices of the EPA and its predecessor the FWPCA, there is not one process that has become universally accepted.

The statement is dead wrong. One example of its fallacy is physical-chemical treatment for municipal wastewaters. Professor Walter Weber, Jr., University of Michigan, was more instrumental than any other man in carrying out the original research and developing this idea. At the present time there are more than 12 physical-chemical treatment plants in various stages of planning and construction in the United States. In the years to come, many more physical-chemical treatment plants will be built. If all the research that the EPA has done resulted in no more than this, its work will all be repaid. University training grants and research are worthwhile and still needed.

Yours very truly,

R. L. Sanks, Professor
Civil Engineering and
Engineering Mechanics

Statement From AAPSE Legislative Affairs Committee

(The following statement was received from Richard Dick just prior to press time. The Editors believe that it represents the most recent and accurate statement regarding the Training Grant situation.)

The Environmental Protection Agency's proposed 1973 budget contains a reduction of \$3 million (from the FY 1962-1972 level of 10.7 million dollars) for support of professional training programs. At press time, the probable affect of such reductions on training programs in the water quality area appeared to depend on the beginning date of the training grant. Those grants operating on a fiscal year from July through June will be using FY 72 funds during the 1972-73 academic year and would not appear to be affected by the proposed cuts. However, those programs on a September through August fiscal year will be operating on the reduced FY 73 funds during the 1972-73 academic year and hence likely will be curtailed. In addition, it is not anticipated that new research fellowships will be awarded.

Professor Richard I. Dick discussed the proposed training grant cuts at a March 15 meeting of the Federal Water Quality Association. A summary of his comments is available but unfortunately could not be included in this issue of the NEWSLETTER.

THIRTEENTH INTER-AMERICAN CONGRESS OF SANITARY ENGINEERING

The 13th Congress of the Inter-American Association of Sanitary Engineering (AIDIS) will be held in Asuncion, Paraguay on August 20 to 26, 1972.

AIDIS, a broad based professional society, with about 2000 members in 24 national sections in Western Hemisphere, was founded in 1946. The membership is composed of top Federal and local officials and technicians, consulting engineers, manufacturers and educators who are actively engaged in improving the environmental quality, of the Americas. International Congresses are held every two years.

Further information may be solicited from K.L. Kollar, President U.S.A. Section, Telephone 967-4346, Washington, D.C.

A.A.P.S.E. 1972 COMMITTEES AND CHAIRMENArrangements Committee - Chairman: Wayne F. Echelberger, Jr.Audit Committee - Chairman: Edward L. Thackston (1971 books) & James W. Patterson
James W. Patterson (1972 books)Awards Committee - Chairman: Frederick G. PohlandEducation Committee - Chairman: George P. Hanna, Jr.Eligibility Committee - Chairman: Billy H. KornegayLaboratory Manual Committee - Chairman: John T. O'ConnorLaboratory Water Chemistry Manual Committee - Chairman: David JenkinsLegislative Analysis Committee - Chairman: Richard I. DickManpower Needs Committee - Chairman: E. J. MiddlebrooksMembership Committee - Chairman: Billy H. KornegayNominating Committee - Chairman: Raymond C. LoehrOperator Training and Continuing Education Committee - Chairman: A.T. WallacePublication Committee - Chairman: Joseph F. MalinaPublic Information Committee - Chairman: E. Robert BaumannRegister Committee - Chairman: Benjamin C. Dysart, IIIRelations with USA National Committee - Chairman: Donald J. O'ConnorResearch Committee - Chairman: N. Bruce HanesSeminar Committee - Chairman: Adnan ShindalaTask Group on AAPSE Manuals - Chairman: A. T. WallaceTask Group on Industrial Relations - Chairman: Mark W. TenneyUndergraduate Environmental Education Committee - Chairman: James E. FoxworthyVisiting Lecturers Committee - Chairman: John F. AndrewsWorkshop Committee - Chairman: Gary W. Heinke (Toronto)
Martin P. Wanielista (Bahamas)

A.A.P.S.E. MANUALS

Draft copies of two worthwhile AAPSE efforts are presently in the possession of the membership for review and critique. The Unit Operations and Unit Processes Laboratory Manual, prepared under the chairmanship of Dr. J. T. O'Connor, appeared early in 1971 and the Water Chemistry Laboratory Manual, prepared under the chairmanship of Dr. D. Jenkins with EPA support, appeared during August of 1971. These two gentlemen are most anxious to obtain your comments and suggestions for improving their efforts. They and the other AAPSE members who helped them certainly deserve our thanks.

Suggestions for two future manuals have been received by the Ad Hoc Committee on Manuals. The suggestions were for a manual on "microbiological techniques" and one on "design." Tentative outlines for these will be prepared soon and funding will be sought to help make them a reality. Suggestions for additional manuals should be made to A. T. Wallace of the University of Idaho, chairman of the Ad Hoc Committee.

A.A.P.S.E. DISTINGUISHED FOREIGN LECTURER

Dr. G.v.R. Marais, the 1972 AAPSE Distinguished Foreign Lecturer, toured the country during the month of February. He visited twelve universities and presented a seminar at each institution entitled, "Kinetic Theory and the Design of Stabilization Ponds." Dr. Marais, who is Professor of Water Resources and Public Health Engineering at the University of Cape Town in South Africa, was very well received by all who had the opportunity to meet and hear him. Dr. Malina and his committee are to be congratulated for an excellent selection and for the high quality program they have maintained.

RECOMMENDATIONS OF THE A.A.P.S.E. ENVIRONMENTAL ENGINEERING COMMITTEE

A Summary of Discussions of the AAPSE Environmental Engineering Committee at their meeting in Denver, Colorado last July has been prepared by Don O'Connor and Robert Thomann of Manhattan College. The report contains the following recommendations.

Recommendations

1. Professional Identity

- a. Anticipating the emergence of environmental engineering as a broad professional field, it is recommended that the name "American Association of Professors in Sanitary Engineering" be changed to "American Association of Professors in Environmental Engineering."
- b. The principle of accreditation was generally endorsed - support of the principle depending on the degree to which individual members of the committee believed environmental engineering exists as a professional entity. It is recommended that present mechanisms of review and criteria be reviewed in cooperation with Environmental Engineering Intersociety Board.

2. Undergraduate Environmental Engineering

- a. Recognizing that environmental engineering is a broad multidisciplinary field, it is recommended that educational programs on the undergraduate level be established and administered by an interdepartmental engineering committee, rather than by establishing a separate undergraduate department and degree.

- b. It is recommended that a survey and analysis be made of existing undergraduate options in environmental and sanitary engineering programs, and consideration be given to strengthening and broadening these options within the various engineering departments specifically with reference to courses in environmental engineering, earth sciences and related mathematics.

3. General Environmental Programs

- a. Because of the concern and interest which environmental programs have created, broad environmental programs and courses have been or are being developed at many universities. It is recommended that AAPSE encourage its members to participate in the formation and development of these programs and wherever appropriate to cooperate in the teaching of these courses.
- b. Anticipating that many members may participate in such programs, either presently or in the future, it is recommended that AAPSE collect and compile course outlines and other pertinent material and distribute them to the membership.

4. Role of AAPSE in Environmental Issues

AAPSE can fill an important leadership role in environmental issues by strengthening direct contacts with EPA, NSF and the Office of Education and can arrange to work with EEIB on legislative action by a formal agreement for use of EEIB's Washington office. It is also recommended that AAPSE identify major environmental issues, establish a priority list of these issues and form a review panel to

- a. seek out individuals of high caliber for preparation of position papers;
- b. develop support for preparation and publication of the papers;
- c. evaluate the desirability of AAPSE endorsing the paper as its official position.

5. Graduate Programs in Environmental Engineering

In order to further strengthen graduate programs in environmental engineering, it is recommended that AAPSE

- a. sponsor a third conference on environmental engineering education similar to the previous conferences held at Harvard and Northwestern;
- b. affirm the Master's Degree as the first professional degree;
- c. recommend to EPA that continuing support of professional Master's programs in environmental engineering should depend on development of a critical number of students in the program after a five-year period;
- d. include in the next AAPSE register a questionnaire on the courses Master's students are actively taking to determine the degree to which recommendations of the 1967 conference have been implemented;
- e. determine the structure of existing Master's programs in air pollution control.

Dr. O'Connor indicates that the entire summary will be published at a later date.

INTERNATIONAL WATER RESOURCES ASSOCIATION

"An International Organization called INTERNATIONAL WATER RESOURCES ASSOCIATION (IWRA) has recently been founded as a non-governmental, not-for-profit scientific organization. It was incorporated in the State of Wisconsin of the United States of America with Headquarters in Milwaukee, Wisconsin. One of the major factors in the establishment of IWRA was the need for a Society to provide an international forum for discussing all aspects of water resources science and technology in an interdisciplinary manner. The establishment of IWRA is the result of the efforts of an international group of well known administrators, engineers, executives and scientists representing many disciplines of the water resources field. For further information concerning objectives of INTERNATIONAL WATER RESOURCES ASSOCIATION, for membership application forms for institutional or individual membership, or for any other questions please contact:

Dr. G. M. Karadi
 Secretary General of IWRA
 (Professor of Civil Engineering)
 E320, Science Complex Building
 University of Wisconsin - Milwaukee
 Milwaukee, Wisconsin 53201 U.S.A."

ENVIRONMENTAL LETTERS

Two AAPSE members, Fred Pohland of Georgia Tech and Joe Ledbetter of the University of Texas, are on the Editorial Board of a relatively new journal entitled Environmental Letters. This journal, published by Marcel Dekker, is a broad-based publication that accepts virtually all environmental papers of quality and emphasizes rapid communication. Dr. Pohland, who is an associate editor, is soliciting manuscripts and may be contacted for further information.

WPCF GOVERNMENT AFFAIRS SEMINAR

The Water Pollution Control Federation's 4th Annual Government Affairs Seminar, held March 14 in Washington, was, by any standards, a resounding success. More than 400 people attended the seminar, whose theme was the Federal Water Pollution Control Act Amendments (Proposals) 1971-72.

The seminar was divided into four sessions: Time Deadlines, Congressional Policies, Definitions; the Permit System; Planning and Wastewater Management; and Needs Assessment and Funding. Each session had three speakers who spoke on the aspects of Intent, Implementation, and Impact.

Thomas C. Jorling, Minority Counsel for the Senate Committee on Public Works, led off the first session by describing the intent of S 2770, which has already passed, 86-0. He said the intent was to restore and maintain the integrity of water by eliminating any discharges by 1985. Since any discharge at all will have some effect on an ecosystem, recycling and containment is the only way to plan for the future. Stream standards were rejected in favor of effluent standards in order that each treatment plant may be forced to be upgraded every time technology improves. The existing state water pollution control programs will be bypassed to a large extent in both planning and enforcement, because the new system must be based on eco-systems, not political subdivisions.

Donald Mosiman, Assistant Administrator for Air and Water Programs of EPA, expressed misgivings over the policies and implementation schedules of S 2770. He pointed out that elimination of all discharges to water would require large amounts of money, resources, and power, and would inevitably increase pollution of both air and land. He pointed out that the definition of pollutant in S 2770 is unclear and would probably forbid the introduction of sterile, distilled water to a stream.

Edward F. Dibble, Chairman of the California State Water Resources Board, expressed fear that the authority of the EPA Administrator under S 2770 is absolute, in spite of the declaration of policy of state primacy. He stated that the bill is full of ambiguities and completely ignores the abilities of the states by setting impossible deadlines and formats for planning and implementation.

In opening remarks on the permit system, Clifton W. Enfield, Minority Counsel of the House Committee on Public Works, said a federal permit system is undesirable and a usurpation of the basic power of the states. Therefore, HR 11896, which was reported out by the House Public Works Committee on March 13, calls for permit programs run by the states, under broad federal guidelines, similar to the present system of air pollution control. This is contrasted with S 2770, which requires EPA approval of every permit issued by every state. Enfield said the only way to avoid duplication and confusion was to have a total state permit program or a total federal permit program, and the House opted for a total state program.

John Quarles, Assistant Administrator for Enforcement of EPA, also expressed the belief that the permit program must be transferred to the states as soon as possible. However, he said that the initial decisions must be made by EPA in order to furnish guidance for the states, so EPA intends to issue permits to ten percent (10%) of the sources, involving ninety percent (90%) of the total discharge, during the six-month interim period between enactment of the new law and the transfer of the permit program to states with approved permit programs.

David B. Seebree, Attorney for E. I. DuPont de Nemours and Company, made a strong plea for considering the actual water quality when developing pollution control programs. S 2770 does not do this.

Later speakers, including Wesley Gilbertson, Deputy Secretary for Environmental Protection of the Pennsylvania Department of Environmental Resources, and Albert J. Erickson, Assistant Director of the EPA Water Office's Division of Planning and Interagency Programs, echoed the sentiments of earlier speakers and criticized the impracticality, inconsistency, and overzealousness of S 2770. Every one of the fourteen speakers expressed a definite preference for HR 11896 in place of S 2770 except two -- both of which were Senate committee staff members.

The program, assembled by the WPCF seminar subcommittee under Chairman E.J. Newbould of the National Clay Pipe Institute, was highly successful in presenting a graphic picture of the two proposed bills in a minimum of time. Both Newbould and Federation officials expressed pleasure at the attendance and the caliber of the speakers. The audience seemed pleased with the program, but generally expressed fear that the proposed new laws would only delay actual pollution control by forcing a massive replanning and reorganization of all programs to meet unclear, ambiguous, ever-changing goals.

SUMMER WORKSHOP AT TORONTO

August 7 - 9, 1972

The topic of this year's AAPSE Summer Workshop is "Interdisciplinary Education Programmes for Environmental Engineers".

Only a few years ago we all 'knew' what a 'sanitary engineer' was; what courses to teach at the undergraduate and graduate level. The greatly increased interest on the part of staff and students in many parts of the university in 'environment' has brought about, at many institutions, new interdisciplinary courses and programmes. In some, the university structure has been changed to allow this interdisciplinary activity to flourish. We think it's time that 'sanitary engineers' examine, together with other disciplines, what role each should have in this broadened field, what effect this has on engineering curricula, what joint teaching efforts should be undertaken, and what forms of changes in university structures might be required to channel increased student and faculty interests into results.

A preliminary format of the programme is now available. It is purposely left flexible at this stage to invite your input in making it better. Gary Heinke has contacted several people to act as speakers or panelists, but invites you to offer your service in any part of the programme of interest to you, by contacting him. It is your Workshop, contribute in any way you wish, and come to Toronto next summer.

The meetings will be held on the Campus at the University of Toronto. The Institute of Environmental Sciences and Engineering, University of Toronto is co-sponsoring the Workshop. Accommodation will be arranged at the new Hyatt House Hotel or at University Residences. Both are located a few steps from the University and from the main shopping area. Make a vacation out of it, bring your wife and children. Toronto is an exciting city. If you have been here before, come and see how much it has improved. If you have never been here, well then a visit is a must.

Registration forms, a detailed programme and hotel reservation forms will be mailed to you by the middle of May. Mark your calendar now -- August 7-9, 1972 at Toronto!

Excellent vacation areas are within easy driving distance of Toronto, for your enjoyment before or after the Workshop.

For further information WRITE: Dr. G.W. Heinke, Workshop Chairman
Associate Professor
Department of Civil Engineering
University of Toronto
Toronto 181, Canada

BAHAMAS WORKSHOP

HOIST THE SAILS MATEY

Much planning has already been completed for the 8th Annual AAPSE Workshop. Arrangements have been made to set sail from Miami on December 18 at 4:45 pm on the newest cruise ship sailing from Miami, The SUNWARD. It was necessary to secure a ship now because they become filled months and in some cases one year in advance of sailing. One of the travel agencies in Orlando has placed on deposit the required amount of money to secure 65 cabins, or room for 130 people, plus some children. The exact rates have not been determined yet, but will probably range (for adults) between \$120 and \$170 per person for the trip (meals & board included). The difference in price reflects the location of the room onboard ship.

It is interesting to note that already 30 people have signed up for the workshop, even though all details have not been completed. About thirty more rooms aboard ship can be secured up to about July 1, 1972. Anyone interested in making reservations now without learning more of the programs can send a letter of intent with a \$25.00 deposit per person attending to Dr. Marty Wanielista, Environmental Systems Engineering Institute, Florida Technological University, Orlando, Florida 32816. A reservation can be cancelled up to sixty (60) days of sailing. A brochure on the total program will be mailed to AAPSE membership and other interested individuals in May or June. Deposits of \$25 must be received before July 1 to confirm our reservations and pay back the travel agency.

Admiral Aapse has returned from a survey of the cruise and has the following report:



PASSPORT DATA: Passports are not required for citizens of the United States or Canada, but citizenship identification should be carried. Aliens lawfully residing in the United States need their Alien Registration Card, or a valid re-entry permit. All others should have valid passports with necessary visas.

VACCINATION: None required.

FOREIGN PURCHASES: U. S. Residents are allowed to bring in \$100.00 worth of duty-free merchandise at retail prices. EACH PASSENGER OVER 21 YEARS OF AGE IS LIMITED TO ONE DUTY-FREE QUART OF LIQUOR. Perfume, Liquor, and Cigarettes may be purchased in our duty-free gift shop at generally lower prices than are available elsewhere.

BAGGAGE ALLOWANCE: 200 lbs. of personal baggage free per fare; half fare in proportion. Baggage in excess of free allowance, 5¢ per pound.

SHIP'S DOCTOR: is authorized to make customary charges for treating passengers at their own request for any illness not originating on board ship.

"Details concerning the technical program for the workshop were included in the previous issue of the NEWSLETTER"

EDUCATIONAL OPPORTUNITIESManhattan College

Seventeenth Summer Institute in Water Pollution Control

Stream and Estuarine Analysis	May 22 - 26, 1972
Biological Waste Treatment	May 22 - 26, 1972
Advanced Topics in Mathematical	May 30 - June 2, 1972
Modeling of Natural Water Systems	

See previous issue of the NEWSLETTER for further information or write Dr. Donald J. O'Conner, Environmental Engineering and Science Program, Manhattan College, Bronx, New York 10471

University of Michigan

Physicochemical Processes for Industrial and Municipal Water Pollution Control
August 14-18, 1972

This course develops the rational basis for design, interpretation, implementation and control of physicochemical processes for water and wastewater treatment for pollution control. The approach emphasizes processes rather than operations, encompassing quality transformations in the several aspects of receiving waters, water supplies, and municipal and industrial wastewaters.

The course is intended for sanitary engineers, chemical engineers, mechanical engineers, chemists, and others concerned with the technical aspects of water quality and pollution control processes.

For further information write: Dr. Walter J. Weber, Jr.
Department of Civil Engineering
University of Michigan
Ann Arbor, Michigan 48104

Montana State University

Summer Program in Environmental Studies

A variety of courses in a "scenic wonderland"

Write: Dr. R. L. Sanks, Professor
Department of Civil Engineering and Engineering Mechanics
Montana State University
Bozeman, Montana 59715

NEW MEMBERS

The following persons have recently joined AAPSE:

- | | |
|---|---|
| 1. E. Corbin McGriff
Assistant Professor
Mississippi State University | 3. Raymond P. Canale
Assistant Professor
University of Michigan |
| 2. Richard A. Conway
Union Carbide Corporation
South Charleston, W. Va. | 4. P. Aarne Vesilind
Assistant Professor
Duke University |

LET'S GO TRAVELINGEuropean Study Tour on Pollution Control (Ohio State University)

Purpose: To study water quality management in two of the most industrialized Continental rivers, Rhine and Thames, see air pollution control equipment in operation at industrial and electrical plants in Europe, survey refuse composting and incineration operations, visit European research stations and universities, tour farms with unique animal waste treatment schemes, and also do sightseeing in culture-rich cities of Europe.

Itinerary: Switzerland, Germany, Czechoslovakia, Holland, England, plus others.

Duration: Five weeks of formal tour and 10 additional free days for individual travel. Formal tour, August 20 to September 25, 1972.

Write: Dr. E. Paul Taiganides
Professor of Environmental Engineering
Department of Agricultural Engineering, Ohio State University
Columbus, Ohio 43210

Ecology In Scandinavia

**A Traveling Workshop on Water Pollution Control and Solid Waste Management
15 days - May 21 to June 4, 1972 - Conducted Tour**

The itinerary is designed for adults who are concerned about, and involved in, the proper care and preservation of the environment. It will appeal to members of conservation organizations, watershed associations, town officials, professionals and others interested in the wise use of natural resources.

The group will participate in seminars and workshops, they will visit projects of water supply, waste disposal, landfills, incinerators, pollution control centers, lakes, inland wet areas, sewage treatment, industrial pollution works, noise control, recycling programs, flood control and outdoor recreation. Opportunity for discussions of mutual interests has been arranged at each of the projects.

Write: Mr. Harold S. Peters, Tour Leader
18 Carriage Drive
Simsbury, Connecticut 06070

ACADEMIC POSITIONS AVAILABLEUniversity of Arkansas

The Department of Civil Engineering at the University of Arkansas is currently receiving applications preparatory to filling a position of Associate Professor of Civil (Environmental) Engineering. Dr. George Brower has resigned from the faculty to enter consulting and this position is currently open. They would like to fill this position either in the summer or beginning fall semester, 1972.

The group currently has three full-time faculty in Environmental Engineering plus two half-time appointments. The graduate student enrollment in Environmental Engineering was 22 in the fall semester of 1971. The undergraduate enrollment in Civil Engineering is approximately 200.

The individual sought is one who has experience in teaching and in design of water and wastewater treatment systems. Special consideration will be given to American minority applicants.

Applicants should submit a resume of their education on experience, including academic records and experience references to Professor Hugh M. Jeffus, Coordinator of Environmental Studies, University of Arkansas, Fayetteville, Arkansas 72701.

University of Tennessee

A teaching and research position in water resources engineering is currently open. Ph.D. required. Send resumes to Dr. Bruce Tschantz, 113 Perkins Hall, University of Tennessee, Knoxville, Tennessee 37916

University of Alberta

Environmental Engineering - Assistant Professor

Ph.D. in the area of water pollution control and environmental systems. Appointment effective July 1, 1972. Salary dependent on qualifications. Submit application including curriculum vitae and names of referees, to Chairman, Department of Civil Engineering, The University of Alberta, Edmonton, Alberta, Canada.

Florida Technological University

The Department of Civil Engineering and Environmental Sciences of Florida Technological University, Orlando, is currently inviting applications from prospective faculty at the Assistant Professor (Environmental Engineer) level. The three current faculty include competence in natural water systems, biological treatment, physical-chemical processes, and water resources areas. The new acquisition should complement the existing capability with competence in the water environment. Backgrounds in systems, chemistry or chemical engineering, as related to environmental engineering problems, also are of interest. Applicants should submit a resume to Dr. W.M. McLellon, Chairman, Department CEES, Florida Technological University, P.O. Box 25000, Orlando, Florida 32816.

Newark College of Engineering

Newark College of Engineering is looking for a young Ph.D. in Environmental Engineering or in Civil Engineering with a major in Environmental Engineering to fill a new position of Assistant Professor.

This engineering school is the largest in the state. For many years the College has had an elective program in Sanitary Engineering for undergraduates and an evening graduate program. More recently the program has been broadened and updated to include many new environmental engineering courses. Because of a relatively dense population and of heavy industrialization, pollution control in New Jersey is a very critical factor in the quality of the environment. This situation makes for many opportunities for the College to serve both the private and public sectors.

The present staff in Environmental Engineering consists of five persons - three Associate Professor, one Assistant Professor and one Instructor. Of these people two are specialists in water pollution two are generalists and one is a specialist in solid waste problems.

For information write Professor Frederick G. Lehman, Chairman Department of Civil and Environmental Engineering, Newark College of Engineering, Newark, New Jersey 07102.

WPCF WORKSHOP ON OPERATOR TRAINING

There will be a workshop on wastewater treatment plant operator training held in conjunction with the WPCF meeting in Atlanta. The workshop will be held October 7-8, 1972.

One session of the program will be devoted to a review of efforts being made by Universities in the area of operator training. John Austin is preparing a summary of this material and would appreciate receiving a brief account of your efforts in this area.

UNIVERSITY POSITIONS SOUGHTPhysical Organic Chemist

Ph.D. University of California at Riverside (1969) interested in environmental control, but has had no direct experience in the area. Experience in chromatography and spectroscopy.

Presently post-doctoral at Texas Tech in cation-radical chemistry. Desires post-doctoral position which emphasizes the chemical aspects of environmental control.

Write: Dr. Robert J. Bussey, 405 Avenue W. #131, Lubbock, Texas 79409

Organic and Electrochemist

Ph.D. in organic chemistry, two years post-doctoral studies in electrochemistry, presently working in industry, some previous experience in water analysis. Desires post-doctoral position.

Write: Dr. Judd C. Posner, 230 Anderson Street, Hackensack, New Jersey 07601

Chemical Treatment

Sanitary Engineering teaching position desired as early as Fall, 1972, geographically restricted to the West Coast (California, Oregon, Arizona, Nevada, Idaho, in that order). Dissertation research concerned the initial mixing portion of the flocculation process as employed in water treatment and was conducted under the supervision of Dr. Warren Kaufman at the University of California.

Interests concern the influence of turbulent mixing rates on net chemical reaction conversions where the physical mixing phenomena are rate controlling and/or undesirable side reactions accompany insufficient mixing rates. Has pursued this interest during the past three years while involved in industrial research and development, particularly its application in coagulation in wastewater treatment processes.

Write: Dr. George E. Wilson, 2110 14th Avenue, Sterling, Illinois 61081

Desalination

Specialty is desalination (electrodialysis and reverse osmosis) and general interests include water pollution, water resource systems engineering, hydrodynamics in and among membranes and thermodynamics (including nonlinear irreversible thermodynamics) and water chemistry. Professional experience includes six years in industry.

Expects to receive Ph.D. in Environmental Engineering in mid-1972, from University of California at Irvine. Desires faculty position.

Write: Georges Belfort, 603 Verano Place, Irvine, California 92664

Environmental Biologist

Environmental scientist with interest in Radio-ecology, aquatic biology, water pollution and health physics seeks faculty or industrial research position. Ph.D., Drexel University, expected summer, 1972. Thesis topic: "The Mathematical Modeling of Radionuclide Uptake by Algae".

Write: Steven M. Gertz, 3131 Knights Road Apt 6-50, Cornwells Heights, Pennsylvania 19020

Visiting Professorship

Assistant Professor in sanitary engineering and water resources at Pahlavi University, Shiraz, Iran desires to visit American university for one year, primarily for teaching and research. Ph.D. from Cornell. Dissertation research on a model trickling filter.

Write: Dr. Parviz Monadjemi, Department of Civil Engineering, Pahlavi University, Shiraz, Iran.

Dr. Monadjemi also expresses an interest in hearing from United States faculty members interested in spending a year at his University in Iran.

HELP THE MANPOWER NEEDS COMMITTEE

The Manpower Needs Committee of AAPSE is in the process of determining the manpower needs in the water pollution control field for the industrial complex. Members of the Committee have contacted hundreds of industries that operate in many of the industrial classifications, and a reasonable response to a relatively simple questionnaire has been received. The Committee is continuing to solicit information from industry, but we are concerned that the sample size that we will be able to collect will be too small to make any significant projections of the needs for all of the 250,000 manufacturers in the USA.

WE NEED VOLUNTEERS TO MAIL THE ATTACHED QUESTIONNAIRE TO AT LEAST 20 INDUSTRIES IN THEIR AREA OF THE COUNTRY. If you are interested in helping, please make XEROX copies of the attached questionnaire and "Industry Groups" listing and mail them with a cover letter explaining the purpose of the survey to as many industries as possible. When the completed questionnaires are returned, please send them to Joe Middlebrooks at the address shown below. If you are interested in Committee activities and wish to become a member of the Manpower Needs Committee, please contact Joe Middlebrooks at the following address:

Utah Water Research Laboratory
Utah State University
Logan, Utah 84321
Phone: 801 752-4100 Ext. 7821

The Committee in conjunction with the Consulting Engineers Council and EPA has just completed a detailed survey of the manpower needs and utilization of manpower in the consulting industry. The final report should be available early in May. If you wish a copy, please write to:

Mr. Robert Snider
Manpower Development Staff
Office of Water Programs
Environmental Protection Agency
Washington, D.C. 20242

INDUSTRY GROUPS

Code	Industry Groups
20	Food & Kindred Products
21	Tobacco Manufacturers
22	Textile Mill Products
24	Lumber & Wood Products
25	Furniture & Fixtures
26	Paper & Allied Products
28	Chemicals & Allied Products
29	Petroleum & Coal Products
30	Rubber & Plastic Products
31	Leather & Leather Products
32	Stone, Clay, & Glass Products
33	Primary Metal Industries
34	Fabricated Metal Products
35	Machinery, except electrical
36	Electrical Equipment & Supplies
37	Transportation Equipment
38	Instruments & Related Products
39	Misc. Manufacturing Industries

AMERICAN ASSOCIATION OF PROFESSORS
IN
SANITARY ENGINEERING

"PRESENT AND PROJECTED MANPOWER NEEDS
BY INDUSTRY FOR WATER POLLUTION CONTROL"

SCIENTIFIC, PROFESSIONAL & TECHNICAL OCCUPATIONS	Total Employees		Projected Manpower Requirements			
	Equivalent full time		Under current operating conditions		Under strict enforcement of water pollution control laws	
	1970	1971	1972	1976	1972	1976
1. Total Waste Process Specialists						
a. Environment/Sanitary Eng.						
b. Chemical Engineer						
c. Chemist						
d. Civil Engineer						
e. Biologist						
f. Other Professionals						
2. Total Technicians						
a. Engineering Technicians						
b. Chemical Technicians						
c. Biological Technicians						
d. Other Technicians						

A. Type of Industry

B. Total full-time equivalent employed in July of: 1971 1970

DISCHARGE OF TACONITE TAILINGS - A SECOND LOOK

The September issue of the NEWSLETTER contained a news release from EPA regarding the discharge of taconite tailings to Lake Superior by the Reserve Mining Company. Professor G. Fred Lee, Director of the University of Wisconsin Water Chemistry Program has submitted to the NEWSLETTER an extensive statement on this problem. In his opinion: "The statement in the previous NEWSLETTER concerning the EPA action... gives the readers the impression that this company is causing significant deleterious harm to water quality in Lake Superior and that they are resisting taking corrective action to eliminate this alleged problem." Professor Lee has served as a consultant to the Reserve Mining Company for the last four years and as such feels that the statement in the previous NEWSLETTER distorts the technical information available on the topic. In particular he quotes the conclusion of the Minnesota District Court to the effect that:

"After 15 years of operations and discharge of tailings into Lake Superior by the Appellant (Reserve), the evidence before the Court establishes that said discharge has had no measurable adverse or deleterious effects upon the water quality or use of Lake Superior insofar as its drinking water quality, any conditions affecting public health, affecting fish life or the reproduction thereof, or any interference with navigation."

The NEWSLETTER editors regret that space does not allow inclusion of Dr. Lee's statement. However, we shall be happy to provide a copy of his remarks upon request.

Please detach and mail to:

Paul H King, Co-Editor
A.A.P.S.E. NEWSLETTER
Department of Civil Engineering
Virginia Polytechnic Institute and State University
Blacksburg, Virginia 24061

Name: _____

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Department: _____

Agency, Firm, or University: _____

Mailing address: _____

City, State, & Zip: _____

_____ change of address

_____ add above individual(s) to mailing list

_____ send to above individual and remove my name

_____ remove me from mailing list

_____ would like to join AAPSE

_____ send information regarding AAPSE and membership

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(803) 656-3276

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Notre Dame, Indiana
46556
(219) 283-6173

NEWSLETTER:

Department of Civil Engineering
Virginia Polytechnic Institute
Blacksburg, Virginia
24061
(703) 552-9451

A.A.P.S.E. NEWSLETTER

Paul H. King, Co-Editor

Clifford W. Randall, Co-Editor

Department of Civil Engineering

Virginia Polytechnic Institute and
State University

Blacksburg, Virginia 24061