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ASSOCIATION OF ENVIRONMENTAL ENGINEERING PROFESSORS Notre Dame, Indiana 46556

JULY, 1973 (815)

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NEWSLETTER

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EDITORS' NOTES

Our cover photo features Independence Hall in Philadelphia and reminds us that August presents a challenging opportunity for the academic side of the environmental engineering profession to discuss their future in the historical setting of the birthplace of our nation. What more could any far-sighted professor desire!

After several recent conferences at which professional papers were presented and blindness and sleep were evident as soon as the lights went out, the editors are pleased to present Bob Sanks' contribution on how to make your own slides. We trust the profession will benefit from this presentation and take heed.

Our next issue will preced the Water Pollution Control Federation meeting in Cleveland, September 30 to October 5, 1973. Contributions should reach the editors no later than September 10, 1973.

FROM THE PRESIDENT'S DESK

This is an especially busy summer for the Association of Environmental Engineering Professors. A major activity, of course, is the Third National Conference on Environmental Engineering Education to be held in Philadelphia on August 13, 14, and 15. Walt Purdom serves as chairman of that Conference. Wes Pipes, who is Chairman of the Task Force on Educational Needs for the National Conference and a member of the AEEP Board of Directors, has carried a heavy load in representing the Association in developing the National Conference.

Many AEEP members are working with representatives of the cosponsoring organization, the American Academy of Environmental Engineers, on various task forces to develop position papers for the Third National Conference. The chairmen of five AEEP committees are members or chairmen of the corresponding committees for the National Conference, and are using their AEEP committees as sounding boards in work on the position papers. These committees are George Hanna's Education Committee, Wes Eckenfelder's Continuing Education Committee, Joe Middlebrooks' Manpower Needs Committee, and the newly formed Technician and Operator Training Committee chaired by John Austin. Additional details on the Conference can be found elsewhere in the Newsletter.

These committees may be busier after the Conference. Then they will analyze developments at the Conference in their respective areas and make recommendations for appropriate action by AEEP.

Other committees also are busy this summer. For example, the Register Committee is compiling the recently submitted summaries of graduate programs at various universities, and the Visiting Lecturer Committee is in the process of finalizing selection of the next Distinguished Foreign Lecturer. Authors of AEEP's Water Chemistry Laboratory Manual met late in June to complete revisions for the second edition of that Manual. The Workshop Committee, chaired by Jimmy Quon, is meeting at the time of the Air Pollution Control Association meeting in Chicago to consider development of next year's Workshop. The Research Committee, chaired by Tom Keinath, has reviewed EPA's proposed interim regulations on research and demonstration grants, and work on federal training support policy continues - largely through the efforts of Wes Pipes and John Austin.

I hope to see you at Philadelphia in August.

. . . Richard I. Dick

THIRD NATIONAL CONFERENCE ON ENVIRONMENTAL ENGINEERING EDUCATION

At Drexel University, Philadelphia, Pennsylvania, August 13-15, 1973

This conference is our opportunity to chart the course of environmental engineering education for the next few years and to prepare a document which could be of great help in our dealings with university administrations and governmental agencies. The Proceedings of the Conference will be written and adopted during the Conference and everyone will have his chance to speak. Plan to come early, work hard, and stay late.

Draft Position Papers have been prepared by seven committees on the following topics:

- 1. Environmental Goals, 1975 to 2000
- 2. Manpower Needs
- 3. Educational Needs, Graduate Programs
- 4. Educational Needs, Undergraduate Programs
- 5. Educational Needs, Technical Education
- 6. Educational Needs, Continuing Education
- 7. Proposed National Policy

The Draft Position Papers will be distributed to AEEP Membership by July 1, 1973.

The Draft Position Papers are working documents to be modified as the Conference decides. On Monday morning, Aug. 13, the committees which prepared the Draft Position Papers will meet in open hearings to consider modifications and additions suggested by Conferees. A list of conclusions and recommendations will also be presented by the committees at that time. At the time of presentation of the Position Papers to the Conference, formal debate will be held and the papers will be modified according to the majority of the Conference. Conclusions and recommendations will be adopted or rejected by voice vote.

On Wednesday, Aug. 15, the Proposed National Policy will be debated and policy statements will be adopted or rejected by vote of the Conference. Policy statements proposed by the other committees or proposed from the floor will also be considered. On Wednesday afternoon the final position papers will be written. The recommendations and policy statements will be published shortly after the Conference. It is planned that the Proceedings of the Conference will be published by November.

EPA TRAINING GRANT AND FELLOWSHIP REGULATIONS

EPA's regulations on training grants and fellowships were published in the June 20 edition of the Federal Register. A preliminary version of these regulations was published on January 29th of this year and comments concerning the proposed regulations were submitted by AEEP as an organization and by several AEEP members as individuals. The June 20 regulations represent the version adopted after EPA's consideration of such comments.

The adopted regulations contain some good news and some bad news. On the positive side, the maximum amount available to each training program for stipends has been increased from \$10,000 to \$20,000 (Section 45.135 d), and new provision has been made for awarding up to \$3600 per year directly from EPA to special fellows (Section 46.110 d). Some of the bad news is that AEEP's suggestion that the regulations be responsive to the types of training and fellowship support described in the enabling legislation was not heeded, and, as indicated in Acting Administrator Fri's letter of transmittal, EPA continues to plan to completely phase out graduate training grants and fellowships in three years.

A copy of the adopted regulations has been distributed to all AEEP members and it was accompanied by a cover letter from President Richard Dick. In his letter, President Dick stated that AEEP continues to work with EPA, committees of the House and Senate, and individual legislators concerning manpower and training needs in environmental engineering and science. It is our hope that suitable means can be found to assure that highly trained personnel will be available in numbers neither too large nor too small to meet the nation's needs.

It appears that the efforts of AEEP and its members have had a positive effect on the governmental decision making process in this situation even though the final results were less than hoped for. Perhaps through continued efforts some of the confusion and misinformation concerning the availability and need of environmental engineers can be cleared up and more realistic training programs can be implemented.

DISTINGUISHED FOREIGN LECTURER TO BE SELECTED

The Visiting Lecturer Committee of AEEP is currently in the process of selecting the 1974 AEEP Distinguished Foreign Lecturer. An announcement of the Committee's selection and an invitation to schools to indicate their desire to participate in this program will be forthcoming in the very near future. This year's committee is under the chairmanship of Dr. W. J. Jewell, who is moving this summer from the University of Vermont to Cornell University.

The next Distinguished Foreign Lecturer will succeed Dr. Klaus Imhoff, who visited several universities earlier this year.

AEEP LABORATORY MANUAL ON AQUATIC MICROBIOLOGY

Laboratory experiments on aquatic microbiology are being solicited for the compilation of a manual under the auspices of the Association of Environmental Engineering Professors.

The purpose of this Manual is to provide a series of laboratory experiments on aquatic microbiology that serve the dual purposes of illustrating microbiological principles and providing the MS student in Sanitary or Environmental Engineering with the knowledge of commonly used microbial analytical techniques for water and wastewater examination. From the solicited experiments, a set of 25-30 experiments that cover the areas of subject matter typically required for an MS course in aquatic microbiology for Sanitary Engineering students will be selected. If you have an interest in supplying candidate experiments for consideration, please send them to Prof. Robert C. Cooper, School of Public Health, University of California, Berkeley, Ca. 94720.

Experiments should be submitted immediately since all proposed experiments are to be conducted at Berkeley this summer, then refined and modified in preparation for a complete write-up of a draft of the Manual. The draft will be circulated to AEEP members and other participants for use during the 1973-74 academic year. During this time participants will be asked to test the various experiments in a classroom situation and from this experience offer suggestions for further modification of the experiments. Using these modifications the manual preparation group will meet for one week in the early summer of 1974 to finalize the preparation of the first edition of the Manual.

CALL FOR PAPERS - 6th MID-ATLANTIC INDUSTRIAL WASTE CONFERENCE

Abstracts are solicited for prospective papers for presentation at the 6th Mid-Atlantic Industrial Waste Conference to be held at the University of Delaware on November 14 and 15, 1973. Papers should deal with treatment of wastewaters resulting from industrial processing. Papers concerning recycling, resource recovery, and technology for meeting zero discharge standards are particularly appropriate.

Proceedings of the Conference will be published and final manuscripts will be due at the time of the Conference. Thirty minutes will be allocated for the presentation of papers. The deadline for submission of abstracts is August 1, 1973. Prospective participants should mail abstracts to:

Richard I. Dick
Professor of Civil Engineering
356 DuPont Hall
University of Delaware
Newark, Delaware 19711

PROFESSORS ON THE MOVE

OKUN VISITS IN ENGLAND Dr. Daniel A. Okun, Head of the Environmental Sciences and Engineering program at the University of North Carolina will be leaving on August 1 for a year's leave for which he has a Fulbright Award to serve as Visiting Professor in the Department of Civil and Municipal Engineering, University College London. With the assistance of Rockefeller Foundation and National Science Foundation research grants, he will be undertaking a study of the reorganization of water management in England and Wales.

O'MELIA TO SPEND YEAR AT CALTECH Dr. Charles O'Melia, Professor of Environmental Engineering, has been awarded a Kenan Leave from the University of North Carolina at Chapel Hill which he will spend at California Institute of Technology where he will be serving as Visiting Professor of Environmental Engineering Science. He will be conducting research on the modeling of natural systems.

SCHROEPFER RETIRES, BUT ONLY FROM TEACHING George J. Schroepfer, who recently retired as Professor of Sanitary Engineering at the University of Minnesota, is now associated as advisory consultant to Toltz, King, Duvall, Anderson and Associates, Engineers and Architects, St. Paul, Minnesota. Mr. Schroepfer is a charter member of the AEEP.

MINEAR MOVES TO TENNESSEE Dr. Roger A. Minear until recently a member of the faculty of the Department of Environmental Engineering, Illinois Institute of Technology has accepted an appointment in the Department of Civil Engineering, University of Tennessee.

HARMS JOINS VIRGINIA TECH STAFF Dr. Lee Harms until recently an Instructor at South Dakota State University, this summer will join the faculty of Virginia Polytechnic Institute and State University. Dr. Harms is particularly interested in the area of non-point source water pollution.

JEWELL GOES TO CORNELL Dr. W. J. Jewell moves this summer from the University of Vermont to Cornell University where he will be affiliated with the Agricultural Wastes Management Program in the Department of Agricultural Engineering.

POSITION SOUGHT

Englishman desires university faculty position in environmental engineering. Ph.D., 1968. Twelve years teaching experience in environmental engineering. Considerable research publications in credit. Field of interests: analytical modeling, biological and physicochemical processes in water and waste water treatment, and aquatic system analysis and optimization. Write Dr. A. K. Deb, Dept. of Civil Engineering, University College London, Gower Street, London WCI, England.

University of Delaware

THE ACADEMIC MARKETPLACE: POSITIONS AVAILABLE

Texas A & M University

Civil Engineer with MS degree to conduct research program in remote sensing of water pollution while working towards Ph.D. in Environmental Engineering. Salary \$11,000 - 13,000, Research Associate. Send resume to: Director, Remote Sensing Center, Texas A & M University, College Station, Texas 77843.

Western Kentucky University A0184 gashdald redra and residule to the

Growth in the environmental health and environmental engineering technology programs has necessitated adding a new faculty member for the 1973 Fall Semester. Applications are sought from those who have experience in the environmental area and would be qualified to teach undergraduate courses in solid waste, radiological health, industrial hygiene as well as courses in the water and waste water area. The doctoral degree is desirable but may be waived for those with extensive, up-to-date, work experience. For information write Boyce D. Tate, P.E., Department of Engineering Technology, Western Kentucky University, Bowling Green, Kentucky 42101.

NEW AEEP MEMBERS

Prof. Thomas D. Waite Civil Engineering Department University of Miami Coral Gables, Florida 33134

Dr. Herbert A. Bevis Environmental Engineering Sciences Dept. University of Florida Gainesville, Florida 32601

Dr. Chin-Pao Huang Civil Engineering Department Wayne State University Detroit, Michigan

Prof. Ivanildo Hespanhol
University of California
Sanitary Engineering Research Center
Richmond Field Station
Richmond, California 94804

Mr. William A. Duvel, Jr.
Michael Baker, Jr., Inc.
P.O. Box 280
Beaver, Pennsylvania 15009

Dr. John Bell School of Civil Engineering Purdue University West Lafayette, Indiana 47907

Dr. LaVere B. Merritt Brigham Young University Department of Civil Engineering Provo, Utah 84601

Dr. John Ball Environmental Engineering Division Civil Engineering Department Texas A & M University College Station, Texas 77840

Prof. Francois Briere Montreal University Civil Engineering 2500 Marie-Guvard Avenue Montreal, Quebec, CANADA

MEETINGS, CONFERENCES AND SHORT COURSES

- First Annual Water Quality Data Exchange Seminar, July 30 August 3, 1973, Villanova University. Write Dr. Lewis J. Mathers, Civil Engineering Department, Villanova University, Villanova, Pennsylvania 19805.
- Development and Population: Alternative Futures in the West, August 1 3, 1973, Colorado State University. Write Center for Continuing Education, Colorado State University, Fort Collins, Colorado 80521.
- Summer Institute on Industrial and Municipal Water Pollution Control:

 Physicochemical Processes, August 20 24, 1973, University of Michigan.

 Write Dr. Walter J. Weber, Jr., Department of Civil Engineering, University of Michigan, Ann Arbor, Michigan 48104.
- Digital Computer Techniques for Tidal Modeling of Well Mixed Estuaries and Shallow Bays, August 27 31, 1973, Oregon State University. Write Dr. Larry S. Slotta, Department of Civil Engineering, Oregon State University, Corvallis, Oregon 97331.
- Instrumentation, Control and Automation for Wastewater Treatment Systems, September 17-21, 1973, Mount Royal Hotel, London, England. Sponsored by the International Association on Water Pollution Research. Write Dr. John F. Andrews, Department of Environmental Systems Engineering, Clemson University, Clemson, South Carolina 29631.
- First World Congress on Water Resources: Water for the Human Environment, September 24 - 28, 1973, Chicago, Illinois. Sponsored by the International Water Resources Association. Write Dr. Gabor M. Karadi, Science Complex Building, University of Wisconsin, Milwaukee, Wisconsin 53201.
- Rural Environmental Engineering: A Conference on Water Pollution Control Technology in Low Density Areas, September 26 28, 1973, Sugarbush Inn, Warren, Vermont. Sponsored by University of Vermont and University of Maine. Write Dr. William J. Jewell, Department of Civil Engineering, University of Vermont, Burlington, Vermont 05401.
- First Annual Symposium on Air Pollution Control in the Southwest, November 5 7, 1973, Texas A & M University. Write Dr. R. W. Hann, Jr., Environmental Engineering Division, Texas A & M University, College Station, Texas 77843.

PURDUE ESTABLISHES ENVIRONMENTAL ENGINEERING CENTER

Creation of an Environmental Engineering Center to coordinate engineering programs at the university and to strengthen "other technologies impinging upon man's environment" has been announced by John C. Hancock, dean of the Purdue Schools of Engineering. Prof. James E. Etzel will direct the new center within the Schools of Engineering. He has been on the faculty of the School of Civil Engineering since 1955 except for two years' industrial experience. He will seek cooperation of environmental health specialists, agriculturalists, political and social scientists as a task force. He specifically noted the need to develop proposals and plans for the handling and disposal of hazardous liquids which cannot now be handled by land disposal or conventional incineration as an example of an early target for the center.

FLORIDA TECH HOLDS EIS WORKSHOP

A two day workshop designed to generate greater understanding of the Environmental Impact Statement preparation and the intent of the NEPA was held at Florida Technological University in Orlando. The workshop was conducted for educators, consultants, county commissioners, county and regional planners, lawyers, and government employees. Approximately 200 people attended.

A number of recommendations were developed from the workshop. Some of these were:

- a. Accept the principle that environmental planning and evaluation should be done early as a part of the overall project.
- b. Interdisciplinary efforts are essential in view of the complexity of environmental questions.
- c. Agencies responsible for review should provide more detailed guidelines reflecting better knowledge and legal decisions.
- d. A short form of the Environmental Impact Statement be initiated to handle simple projects.
- e. EIS reports should be made widely accessible.
 - f. Adequate reviews of projects statements should be paid for as part of the project cost.
 - g. More details on statement preparation to include data and analyses methodology should be included and a state computerized data bank for data be developed to the extent practical.

Five sessions were held at the workshop stressing federal responsibility, the review procedure, statement preparations, innovative methods, and case studies. Proceedings of the workshop are available for \$12 while the supply lasts from: Marty Wanielista, Environmental Systems Engineering Institute, Florida Technological University, P.O. Box 25000, Orlando, Florida 32816. A check made payable to Florida Technological University must accompany your order.

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a 3/4 inch thin wall conduct projecting

AWWA STUDENT SESSION SUCCESSFUL

a bellows is excellent but it

The Universities Forum at the recent AWWA Annual Conference in Las Vegas, Nevada, received substantial favorable comment both from the academic community as well as the profession at large. John O'Connor, session chairman, reported that the papers were excellent, both in presentation and reception and that attendance was good despite the fact that the program was the last session of the last day. Because only eight papers could be presented out of a total of over 40 submitted, the coordinating committee plans to request a full day for the student program at the 1974 AWWA Conference in Boston.

DO-IT-YOURSELF DEPARTMENT: MAKE YOUR OWN 2 X 2 SLIDES

Anyone with a good 35mm single lens reflex camera can make his own slides with only a little extra (and inexpensive) equipment. "Rolling your own" is more convenient than entrusting the job to others, and high quality lenses in cameras such as Canon, Nikon, Fujica, Pentax, etc. assure sharp pictures and fully professional quality.

Ektachrome-X daylight film (ASA 64) makes low cost possible. It is fine grained, and it has the right speed, wide latitude, and gives accurate color rendition. It works well with black and white, too, although black comes out deep purple. In many cities, processers can prepare Ektachrome slides within 24 hours. The resolute amateur can even do his own developing. The cost of a slide for film, developing, and mounting varies from 15 to 18 cents.

Summary of Equipment Needs

In addition to the camera, the needed equipment includes: electronic flash, extension cords for the flash, extension tubes for the camera lens and a copy board. Total cost of these items is \$50 plus. The "plus" is an inverse function of your ingenuity in fashioning a suitable copy board. The cheapest satisfactory copy boards cost about \$25, but a good substitute can be home-made for \$5. One can spend more for better equipment, but it really isn't necessary. Fortunately, most of this equipment is generally useful to the amateur photographer for other purposes, too.

The equipment shown in Figure 1 is economy grade but quite satisfactory. The Kako 818 flash unit (\$24.95) can be operated on batteries, but it requires 12 to 30 seconds to recharge the capacitor and the batteries have limited life. Plugged into 110 volt AC, the unit recharges itself in 4 or 5 seconds and does not drain the batteries. A bellows is excellent but it must be used with a bellows focusing lens - an expensive combination. A Kalcor Automatic extension tube set (\$12.95) is less convenient, but it allows the use of the regular camera lens.

The telescoping tubes attached to the copy must allow the camera to be set anywhere between 14-1/2 to 25 inches above the copy board. These tubes can be made from 1 inch 0D brass tubing 13 inches long (obtainable from a plumber) and a 3/4 inch thin wall conduit projecting 12 inches from the copy board. The conduit could be cemented into a 3/4 inch chipboard with epoxy glue but a steel base plate welded or brazed to the conduit would be stronger. A satisfactory clamp consists of a radiator hose clamp around the lower end of the brass tubing slotted for a length of one inch. A knurled disc brazed to the hose clamp screw is far more convenient that a screwdriver. A cardboard carton can be placed on the copy board for close-ups.

Guess work in positioning the camera can be eliminated by making a scale (shown in Figs. 1 and 2) 25 inches long. Calibrate the scale to read length of field of view at the height of the camera back. For example, for a field of view 8 inches long, the back of a camera with a 55mm lens must be 13-3/4 inches from the copy board. So at a height of 13-3/4 inches the figure "8"

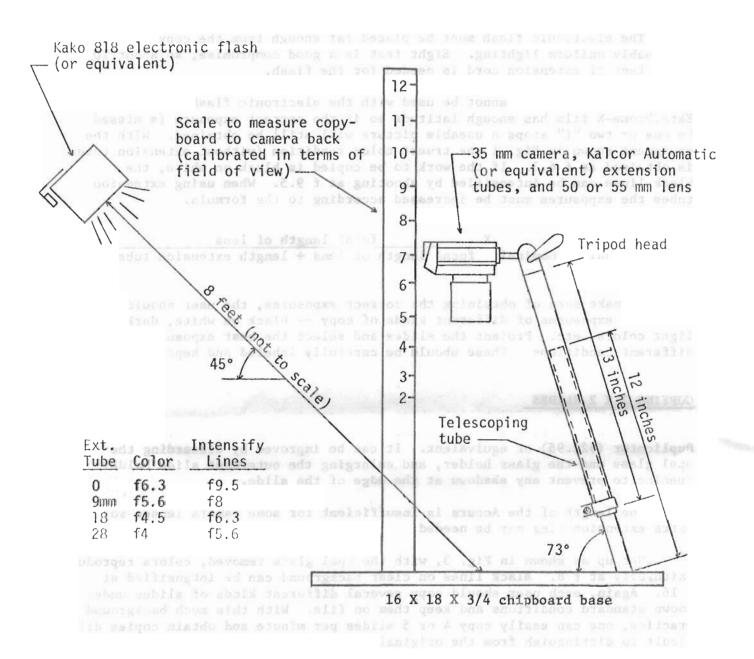


FIG 1. Set-Up For Making Original Slides

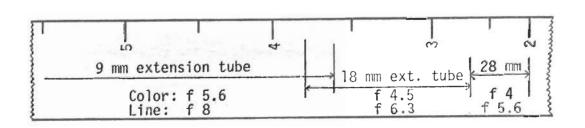


FIG 2. Portion of Scale

is written. The versatility of the ruler can be increased by indicating the required "f" stop and the required extension tube for the various picture sizes as shown in Fig. 2.

The electronic flash must be placed far enough from the copy to give reasonably uniform lighting. Eight feet is a good compromise, so about 10 to 12 feet of extension cord is needed for the flash.

The light meter cannot be used with the electronic flash, but fortunately, Ektachrome-X film has enough latitude so if the correct exposure is missed by one or two "f" stops a useable picture will still be obtained. With the equipment shown in Fig. 1 the truest color rendition (without extension tubes) is obtained at f 6.3. If the work to be copied is black on white, the black lines can be intensified by shooting at f 9.5. When using extension tubes the exposures must be increased according to the formula.

f = f X focal length of lens
actual nominal focal length of lens + length extension tube

To make sure of obtaining the correct exposures, the user should make a series of exposures of different kinds of copy -- black on white, dark colors, light colors, etc. Project the slides and select the best exposures for different conditions. These should be carefully labeled and kept on file.

COPYING 2 X 2 SLIDES

The only extra piece of equipment needed is an Accura VM Slide Duplicator (\$22.95) or equivalent. It can be improved by discarding the opal glass and the glass holder, and enlarging the outermost slide holder opening to prevent any shadows at the edge of the slide.

The length of the Accura is insufficient for some camera lenses so an extra extension ring may be needed.

Set up as shown in Fig. 3, with the opal glass removed, colors reproduce faithfully at f 8. Black lines on clear background can be intensified at f 16. Again, each user should copy several different kinds of slides under known standard conditions and keep them on file. With this much background practice, one can easily copy 4 or 5 slides per minute and obtain copies difficult to distinguish from the original.

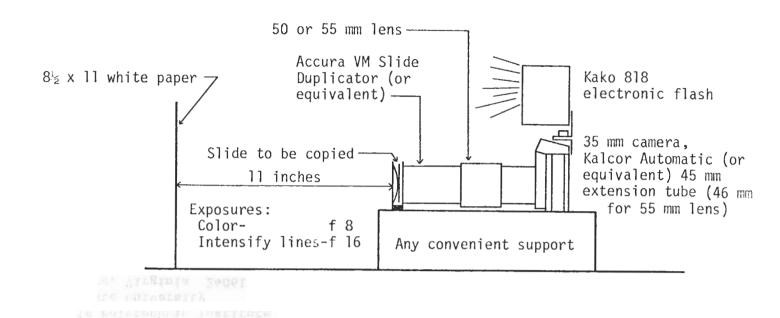


FIG. 3. APPARATUS FOR COPYING SLIDES

Please detach and mail to:

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

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send to above individual and remove my name					
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send information regarding AFE	P and membership				