



# Newsletter

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JUNE 1977

## THE PRESIDENT'S CORNER



The reduced emphasis on environmental manpower development which has been evidenced in the past few years can only be viewed as indicative of a low priority given to the technical manpower role in solving environmental problems. This decline in manpower emphasis is not compatible with the strong evidences of need for increased environmental expertise. More sophisticated analyses and studies have identified the presence of trace toxic substances in the environment. We are now developing a better understanding of complex reactions between contaminants that cause added effects to air and water quality. These added to the increases in energy production activities with resulting environmental insults, land use decisions (or non-decisions), and other factors, all contribute to the complexity of maintaining a quality environment. Sophisticated systems analysis and evaluations which will be useful in decision-making will require a high level of sophistication in technical training. Further, due to lack of technical expertise, the regulatory bodies often turn to entities in the private sector to provide them with the technical and economic information that they need to formulate decisions to regulate these very same entities. Thus in these instances, without

independent monitoring and evaluations, it would appear that a conflict of interest could arise that would not be in the best public interest.

These questions and other dealing with the aspects of environmental manpower have been considered by the Committee for Study of Environmental Manpower of the National Research Council's Commission on Natural Resources. The Committee report is one of a series of analytical studies being prepared by the National Research Council for the Environmental Protection Agency. Volume 1, "Prospectives on Technical Information for Environmental Protection," the first of a series of eleven volumes has been released. This volume contains an executive summary of the environmental manpower committee report. This summary speaks to manpower policies, manpower planning, technical inputs to EPA decision-making, manpower coordination, assistance to state agencies, projection models, requirements in the private sector, and training aspects. The committee recommends that Congress address the environmental manpower needs and clarify its intent in the existing legislation with clear directives regarding manpower and training authority. A thorough assessment of environmental manpower is urged. The report is cautious toward training support with recommendations to "develop local institutional arrangements to meet specialized training requirements. --to develop training materials where appropriate, and to train instructors." Direct training involvement is sanctioned "on a limited basis." Funding is recommended to educational institutions to support a number of environmental research and training centers to serve as focal points for technical assistance to small businesses and government. No direct reference is made to continuation or revitalization of training grants. Thus the fate of further training support will undoubtedly be tied to the proposed assessment of needs for environmental manpower.

George P. Hanna  
University of Nebraska

**AEEP/ENGINEERING—SCIENCE AWARD  
FOR BEST DOCTORAL THESIS  
RELEVANT TO PRACTICE**

This is to announce that applications are being accepted for the Engineering Science Award of \$1000 for the best doctoral thesis relevant to practice published between July 1, 1976 and June 30, 1977. The award will be \$500 for the Ph.D. candidate, both monies to be spent at the individuals' discretion.

The research will be judged on the following basis: Scientific & technical-20%; originality-20%; practical-50% and clarity-10%. Three copies of the candidate's thesis must be submitted by June 30, 1977 to Dr. Charles R. O'Melia, Department of Environmental Engineering, University of North Carolina, Chapel Hill, NC 27514. (919) 966-1052. If the thesis is not of a standard thesis format or is a final project report, a certification from the major professor must be included to indicate that it is an identical reproduction of the original thesis.

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**TRAINING GRANTS, RESEARCH FUNDING AND  
PURDUE WORKSHOP DISCUSSED BY BOARD**

Among the many topics discussed at the AEEP Board of Directors meeting held in conjunction with the Purdue Industrial Waste Conference, three topics stand out as extremely important to the membership. These topics are: Training grants, research funding, and Purdue Workshop.

Bruce Hanes, Chairman of the Legislative Analysis and Training Support Committee and AEEP Vice-President, presented a report on his activities in Washington with respect to the continuation of the training grants. Regular funding for the training grants has not been available for several years now because of the policies of the previous administration. However, rather than letting the concept of training grants be phased out completely and permanently, the Legislative committee has continued to work with EPA, members of Congress and other officials to obtain "add-on" funding. While this has kept the funding alive, it has directly benefited only those schools with current training support. EPA has not allowed open competition for these funds because there was no guarantee of their continuation.

The activities of the Legislative committee during the past two years has been a holding action to see what would happen if a new administration came into power. Dr. Hanes and other committee members are currently working with the Carter administration for the expansion of these funds to a new, permanent and competitive, training grant program. If the new administration still wants to drop training support then AEEP will drop its efforts with Congress and work on some more productive activities.

The development of research funding was the subject of a report from the Research Committee presented by Charles O'Melia. There appears to be an attitude among funding agencies that the research done in universities never gets into the field. While this is not true, it has shifted funding away from the universities and to private research organizations or government research facilities. We need to document how university research has contributed to the effort in water pollution control. We also need to work with the legislative committees in setting policy rather than always reacting to it after it is set.

Among AEEP activities in the area of research development is the proposed conference on "Fundamental Research Needs for Water and Wastewater Treatment Systems" which is tentatively scheduled for this fall in Washington. This conference will provide a forum for the exchange on research needs between the academic community, users of the research, and granting agencies.

Thomas Pollock, Chairman, AEEP Purdue Workshop, was commended for the excellent program he had prepared on "Applied Statistics in Environmental Engineering. There was a good response to the program and the speakers were excellent.

The topic for next years AEEP Workshop at the Purdue Industrial Waste Conference will be "Land Treatment of Wastewaters". William Jewell will be the coordinator for that workshop.

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**INTERNATIONAL ASSOCIATION ON WATER  
POLLUTION RESEARCH**

The Ninth Biennial Conference of the International Association on Water Pollution Research will be held in Stockholm on June 12-16, 1978. AEEP members interested in attending might consider also attending the 4th European Sewage and Refuse Symposium in Munich on June 5-9, 1978 and the 5th International Sewage and Refuse Engineering Exhibition in Munich on June 5-10, 1978.

The program for the Stockholm Conference is to be selected from completed papers (not abstracts) submitted for consideration prior to September 1, 1977. Individuals interested in submitting a paper should contact IAWPR for a listing of topics to be covered at the Conference and for details on manuscript requirements. The address is:

Secretary-Treasurer  
International Association on Water  
Pollution Research  
Chichester House  
278 High Holborn  
London, WC1  
England

Richard I. Dick

As a service to the AEEP Membership, the Board of Directors have decided to publish the titles of thesis completed each academic year by June 30. Only those lists submitted by the membership will be included in the listing. The next directory will appear early this fall for the 1976-77 work. See the details elsewhere in this Newsletter.

Since the availability of documents vary, persons interested in a specific publication will be asked to contact the Faculty Advisor directly as indicated by the ( ).

#### Air Pollution

"Ozone-Precursor Relationships of Nitrogen Dioxide, Hydrocarbon, and Sunlight Under Selected Conditions", Joseph E. Sickles II, 299 pp., University of North Carolina-Chapel Hill (Lyman A. Ripperton).

"The Effect of Trace Gaseous Constituents in the Air on Data from the Electrical Aerosol Size Analyzer", George A. Dwiggin, 64 pp., August 1975, University of North Carolina-Chapel Hill (David A. Fraser).

"The Fate of Oxides of Nitrogen in an Outdoor Smog Chamber", Bruce A. Gantner, 90 pp., August 1975, University of North Carolina-Chapel Hill (Harvey E. Jeffries).

"An Analysis of Long Range Transport Using Trace Metals in Rainwater", Daniel R. Koenigshofer, 86 pp., August 1975, University of North Carolina-Chapel Hill (Parker C. Reist).

"Evaluation of the Cascade Centripeter", Jefferson B. Prather, 56 pp., August 1975, University of North Carolina-Chapel Hill (Parker C. Reist).

"A Feasibility Study of a Photon Counting Chemiluminescent Ozone Monitor", George W. Siple, 104 pp., August 1975, University of North Carolina-Chapel Hill (Harvey E. Jeffries).

"Comparison of a Portable Infrared Analyzer and a Gas Chromatograph in the Determination of Airborne Concentrations of Solvent Vapors", Wesley J. Vincent, 73 pp., August 1975, University of North Carolina-Chapel Hill (David A. Fraser).

"The Influence of Meteorological Factors on Variations of Nonurban Ozone", Emerico L. Martinez, 70 pp., December 1975, University of North Carolina-Chapel Hill (Harvey E. Jeffries).

"Implementing the Clean Air Act: The Development of Air Quality Maintenance Plans", Joseph J. Sableski, 97 pp.,

December 1975, University of North Carolina-Chapel Hill, (Robert L. Harris).

"Design and Performance of a Mobile System for Multiple Source Calibration of Air Pollution Monitors", Dennis M. Stotts, 71 pp., University of North Carolina-Chapel Hill (Harvey E. Jeffries).

"A Survey of Community Attitudes Toward Utilizations of the Bus System as a Fuel Conservation Measure", Francis X. Voycik, 59 pp., December 1975, University of North Carolina-Chapel Hill (Morris A. Shiffman).

"A Review of Sulfur Dioxide Production and Control at Nonferrous Smelters", James Campbell Caraway, 102 pp., May 1976, University of Texas (Joe O. Ledbetter).

"Pollution Emission Factors for Pathological Incinerators", Frank P. Gallagher, III, 66 pp., December 1975, University of Texas (Joe O. Ledbetter).

"Effects of Oxidation on the Dewatering Properties of Limestone Scrubber Sludges", Adrian J. Huckabee, 113 pp., December 1975, University of Texas (Michael J. Humenick).

#### Agricultural Waste Management

"Sidedressing Corn with Dairy Manure at Chazy, New York", Michael J. Carney, 31 pp., May 28, 1976, Cornell University (David C. Ludington).

#### Instrumental Methods of Analysis

"A selective Amperometric Membrane Electrode for Measurement of Chlorine and Bromine Residuals in Water", Frederick L. Keeslar, 81 pp., August 1975, University of North Carolina-Chapel Hill (J.D. Johnson).

"Development of a Column Chromatography Method for Field Pre-Concentration of Trace Metals with Application to the Haw-Cape Fear Rivers, N.C.", J. Herbert Dempsey, 80 pp., May 1976, University of North Carolina-Chapel Hill (Mark S. Shuman).

"A Report on an Improved Method for the Isolation of Aqueous Organic Materials Using XAD-2 Macroreticular Resin", David W. Schnare, 95 pp., May 1976, University of North Carolina-Chapel Hill (Russell F. Christman).

"Ozone Amperometric Membrane Electrode and Aqueous Residual Ozone Analysis", James F. Dunn, December 1975, University of North Carolina-Chapel Hill (J.D. Johnson).

"X-Ray Fluorescence Sample Preparation for Evaluating Trace Element Scavenging by Precipitation", Jose Alberto Lopez-Conzalez, 82 pp., December 1975, University of Texas (Hal B.H. Cooper, Jr.).

#### Industrial Waste Treatment

"Wastewater Disposal System for EGGIT, Inc., Interlaken, N.Y." David B. Ertz, 90 pp., June 2, 1975, Cornell University (William J. Jewell).

"Exploration of the Commercial Value of Paper Mill Sludge", Tomas Dornbush, 85 pp., August, 1976, University of Massachusetts/Amherst (Francis A. DiGiano).

"Biological Treatment of Wastewaters from Lead-Zinc Mine/Mill Operation", W.J. Ernst, 123 pp., 1975, University of Missouri-Rolla (B.G. Wixson).

"A Study of Trace Organic Emissions in Mining and Milling Wastewaters in the New Lead Belt of Southeastern Missouri", A.J. Callier, 138 pp., 1975, University of Missouri-Rolla (J.C. Jennett).

"Investigation of Coagulation-Precipitation and Ultrafiltration for the Regeneration of Brines in the Cucumber Pickle Industry", Louise F. Horney, 56 pp., University of North Carolina-Chapel Hill (Linda W. Little).

"Reduction of BOD of Cucumber Pickling Wastes by *Candida krusei* and *Hansenula Anomala*", Lloyd R. Hontz, 48 pp., December 1975, University of North Carolina-Chapel Hill (Alvis G. Turner).

"Treatability of Dye Wastes by Absorption on Macroreticular XAD Resins", W. Gary Smith, 157 pp., August 1975, University of North Carolina-Chapel Hill, (Philip C. Singer).

"The Feasibility of a Centralized Treatment System for Metal Finishing Wastes in Alabama", James L. Bryant, 84 pp., December 1975, University of North Carolina-Chapel Hill, (James C. Lamb).

"Investigation of Effectiveness of Polymers in the Treatment of Industrial Wastewaters", Mrs. Fusan T. Bilgen, 151 pp., 1975, Rensselaer Polytechnic Institute (Lawrence K. Wang and Ray W. Shade).

"Physicochemical Treatments of Pulp and Paper Mill Wastewater by Chemical Precipitation, Coagulation, Absorption, Flotation and Filtration", 195 pp., 1976, Rensselaer Polytechnic Institute (Lawrence K. Wang).

"Industrial Wastewater Treatment of Physicochemical and Biological Processes", Thomas J. Lynch, 172 pp., 1976, Rensselaer Polytechnic Institute (Lawrence K. Wang).

"Coalescence of Emulsified Oily Wastes by Fibrous Bed", John-Nan Chieu, 183 pp., August 1975, University of Texas/Austin (Earnest F. Gloyna).

"The Treatment of High Carbonaceous Wastes in a Submerged Packed-Bed Reactor Using Pure Oxygen", Patrick S. Hogan, 60 pp., December 1975, The University of Texas/Austin (Joseph F. Malina, Jr.).

"Potential for Anaerobic Digestion of Beef Cattle Feedlot Waste for Stabilization and Methane Recovery", David A. Malish, 179 pp., August 1975, University of Texas/Austin, (Michael J. Humenick).

"Estimation of Hydrocarbon Stripping During Refinery Wastewater Aeration", Clinton P. Richardson, 62 pp., May 1976, The University of Texas/Austin (Joe E. Ledbetter).

#### Land Treatment

"Soil Injection of Septage in Tompkins County, New York", Scot McClintock, 44 pp., June 2, 1975, Cornell University (Douglas A. Haith).

"A Procedure to Determine Monthly Nitrate Balance in the Soil", Ants Uiga, 199 pp., June 2, 1975, Cornell University (Raymond C. Loehr).

"Treatment and Disposal of Septic Tank Sludge in Tompkins Co., New York", Donald E. Johnson, 47 pp., January 21, 1976, Cornell University (William J. Jewell).

"Prediction of Nitrogen Transformations in the Storage Lagoon of a Land Treatment System", Yi-Siung Su, 165 pp., May 1976, University of Massachusetts, (Francis A. DiGiano).

"The Effect of Soil Type on the Removal of Nutrients from a Secondary Wastewater Effluent by Land Application", R.L. Smith, 86 pp., 1975, University of Missouri/Rolla, (S.G. Grigoropoulos).

"Disposal of Lead and Zinc Cationic Wastes on Soils", S.M. Linnemann, 169 pp., 1975, University of Missouri/Rolla (J.C. Jennett).

#### Non Point Pollution

"Non-Point Source Pollution in Broome-Tioga Counties, New York", John V. Dougherty, 56 pp., June 2, 1975, Cornell University, (Douglas A. Haith).



"Adaptation of the EPA Storm Water Management Model for Use in Preliminary Planning for Control of Urban Runoff", George F. Smith, 152 pp., June 1975, University of Florida (Wayne C. Huber).

"Economics of Urban Stormwater Quality Management", Michael P. Murphy, 123 pp., June 1975, University of Florida, (James P. Heaney).

"Characterization of Urban Runoff in Greenfield, Massachusetts", Paul J. Cavicchi, 127 pp., June 1976, University of Massachusetts, (Francis A. DiGiano).

"Estimating Runoff of Road Salt in Greenfield, Massachusetts, Chiung-Nien Lee, 67 pp., August 1975, University of Massachusetts, (Francis A. DiGiano).

"Suspended Sediment Analysis of the Merrimack River", Dennis Verdi, 50 pp., April 1976, University of Massachusetts (Donald D. Adrian).

#### Rivers, Estuaries and Lakes

"Determination of Vertical Turbulent Diffusivities of Heat in a North Florida Lake", Jerry A. Steinberg, 206 pp., August 1975, University of Florida (Wayne C. Huber).

"Mathematical Modeling of Phosphorus Exchange Between Sediments and Overlying Water in Shallow Eutrophic Lakes", Phillip D. Snow, 268 pp., July 1976, University of Massachusetts (Francis A. DiGiano).

"Effects of a Century Old Missouri Lead Mining Operation Upon the Water Quality, Sediments and Biota of Flat River Creak", R. Kramer, 137 pp., 1975, University of Missouri/Rolla (B.G. Wixson).

"Aquatic Transport of Lead and Other Heavy Metals from a Lead-Zinc Smelting Area", J.L. Foil, 121 pp., 1975, University of Missouri/Rolla (B.G. Wixson).

"Cycling of Organic Carbon in Lake Sediments", William S. Brewer, 197 pp., August 1975, University of North Carolina-Chapel Hill (Frederick K. Pfaender).

"Investigation of Mercury Levels in Fish and Evaluation of the Potential Human Risk", Elliott Levine, 70 pp., December 1975, University of North Carolina-Chapel Hill (Leonard Goldwater).

"The Effect of Artificial Destratification on the Phytoplankton and Related Factors of University Lake, Chapel Hill, North Carolina", Benjamin W. Breedlove III, 126 pp., August 1975, University of North Carolina-Chapel Hill (Charles M. Weiss).

"The Distribution of Viable Count Bacteria and Its Relationship to Other Environmental Parameters in the Surface Waters of Belews Lake, North Carolina", John R. Lutz, 73 pp., August 1975, University of North Carolina-Chapel Hill (Charles M. Weiss).

"Availability of Aluminum Phosphate Complexes to a Green Alga in Various Culture Media", John C. Matheson, 129 pp., August 1975, University of North Carolina-Chapel Hill (Donald E. Francisco).

"Petroleum Hydrocarbons in the Sediments of the Neuse River", Earle N. Buckley, 169 pp., December 1975, University of North Carolina-Chapel Hill (Frederick K. Pfaender).

"Some Effects of Petroleum Hydrocarbons on the Growth of Freshwater Phytoplankton", John Calvin Coffey, 55 pp., May 1976, Rice University (C.H. Ward).

"Exchange of Nitrogen and Phosphorus with Sediments of the Brackish Water Marshes of Lavaca Bay, Texas", Billy Austin Brown, 134 pp., December 1975, University of Texas, (Neal E. Armstrong).

"The Role of Plants in Nutrient Exchange in the Lavaca Bay Brackish Marsh System", Anita Joan Dawson, 126 pp., University of Texas (Neal E. Armstrong).

"An Assessment of Phosphorus Data Collected from Lake Lyndon B. Johnson", George E. Green, 126 pp., December 1975, University of Texas (E. Gus Fruh).

"A Continuous Equation to Describe Bioassay Results for Acute Exposure of Fish to Toxins", Herman W. Hoffman, Jr., 163 pp., May 1976, University of Texas (Neal E. Armstrong).

"Nutrient and Dissolved Oxygen Dynamics of a Short Detention Time Texas Reservoir", Jerald Schnoor, 313 pp., December 1975, University of Texas (E. Gus Fruh).

"A Methodology for Investigating Fresh Water Inflow Requirements of a Texas Estuary", Walter Lambert, 999 pp., University of Texas (E. Gus Fruh).

#### Water and Wastewater Treatment

"The Feasibility of Treating Low Strength Organic Wastes with an Anaerobic Attached Film System", Alfred P. Leuschner, 105 pp., May 28, 1976, Cornell University (William J. Jewell).

"Fundamental Studies on the Nitrification Process", Mary McGhee, 121 pp., October 1975, University of Kansas (Ross E. McKinney).

"Varying Biological Solids Concentrations and Substrate Concentrations in the Warburg Respirometer", Frank Nelson, 155 pp., October 1975, University of Kansas, (Ross E. McKinney).

"Nitrification and Endogenous Denitrification in a Complete Mixing Activated Sludge System", Steve Innes, 96 pp., October 1975, University of Kansas, (Ross E. McKinney).

"A Colloidal Titration Technique for Determining Optimum Coagulant Dosages", Edie Snethen, 120 pp., October 1975, University of Kansas (W.J. O'Brien).

"Solids Retention Time and the Metabolism of Acetate by Activated Sludge", Allan E. Williams, 80 pp., May 1976, University of Kansas (Ross E. McKinney).

"Zeta Potential Control of Lake Michigan Chemical Coagulant Dosage", Edward T. Manning, Jr., 89 pp., November 1975, Marquette University, (C.J. Crandall).

"An Extended Procedure for Evaluating Oil Sorbent Materials", Paul M. Barry, 194 pp., December 1975, Marquette University (C.J. Crandall).

"A Survey of Well Water Quality in Elm Grove, Wisconsin, Francis X. Tiefert, 77 pp., December 1975, Marquette University (J.R. Kipp).

"A Kinetic Analysis of Ammonia Removal by Chloramine Conversion on Activated Carbon", Alfred B. Scaramelli, 164 pp., June 1976, University of Massachusetts, (Francis A. DiGiano).

"A Pilot Plant Evaluation of Nitrification in Fixed Growth Reactors", Walter W. Schwarz, 77 pp., June 1976, University of Massachusetts (Francis A. DiGiano).

"Sulfide Generation in Experimental Filled Pipes", M. Mariappan, 164 pp., 1976, University of Missouri-Rolla (J.C. Huang).

"Phosphorus Removal in Extended Aeration by Addition of Sodium Aluminate, Peter D. Spawn, 65 pp., June 1976, University of Massachusetts (Francis A. DiGiano).

"Interaction of Wastewater Organics and Chloramines on Activated Carbon", David S. Friedman, 51 pp., August 1976, University of Massachusetts (Francis A. DiGiano).

"A Survey of the Handling, Disposal and Treatment of Septage in Western Massachusetts", Paul H. Kwiatkowski, 81 pp., May 1976, University of Massachusetts, (Tsuan Hua Feng).

"Chemical Treatment of Septage", Anthony J. Tawa, 86 pp., August 1976, University of Massachusetts (Tsuan Hua Feng).

"Chronic Shock-Load Effect on Activated Sludge Process", Hsiu-Luan Chang, 86 pp., August 1976, University of Massachusetts (Tsuan Hua Feng).

"The Rate of Acclimation and Biodegradation of Crude Oil by Aerobic Bacteria in an Aqueous Medium: A Preliminary Study", David J. Milan, 34 pp., June, 1976, Michigan State University (Mackenzie L. Davis).

"Sequential Wastewater Treatment by Naturally Selected Populations", G. Wiegele, 54 pp., 1976, University of Missouri-Rolla (D.E. Modesitt).

"A Study on the Application of Biogrowth Sheets to Improve Lagoon Effluent Quality", P.H. Cheng, 62 pp., 1975, University of Missouri-Rolla (B.G. Wixson).

"Effects of Colloidal Materials and Polyelectrolytes on Carbon Adsorption in Aqueous Solution", J.T. Garrett, 100 pp., 1975, University of Missouri-Rolla, (J.C. Huang).

"A Study of Trace Organics and Trace Organic-Bound Metals in Raw and Finished Waters", R.L. Stewart, 1975, University of Missouri-Rolla (S.G. Grigoropoulos).

"Denitrification of a Synthetic Waste with a Submerged Filter", D.J. Grana, 80 pp., 1975, University of Missouri-Rolla (D.E. Modesitt).

"Inactivation of Poliovirus in Alum Coagulated Secondary Sewage Effluent by Bromine and Chlorine", Alice Freund, 92 pp., August 1975, University of North Carolina-Chapel Hill (M.D. Sobsey).

"The Kinetics of Dibromamine Decomposition", John L. Cromer, 83 pp., May 1976, University of North Carolina-Chapel Hill (J.D. Johnson).

"Filtration of Alum Treated Trickling Filter Effluent", Philip P. Braswell, 103 pp., August 1975, University of North Carolina-Chapel Hill (James C. Brown).

"Digester Supernatant: Significance and Treatability", Desmond F. Lawler, 108 pp., August 1975, University of North Carolina-Chapel Hill (Philip C. Singer).

"Evaluation of the Tube Settler on a Plant Scale in Wastewater Treatment", Christopher Tompkins, 69 pp., August 1975, University of North Carolina-Chapel Hill (James C. Lamb).

"Use of Surface Active Quaternary Ammonium Compounds for Water Disinfection", George G. Peery, III, 86 pp., 1975, Rensselaer Polytechnic Institute, (Lawrence K. Wang).

"The Modeling and Kinetics of Endogenous Oxygen and Nitrate Respirations in Activated Sludge", Jon F. Bergenthal, 180 pp., 1976, Rensselaer Polytechnic Institute (Lawrence K. Wang).

"Analysis of Anionic Surfactants in Water and Wastewater by Two-Phase Titration", Pedro J. Panzardi, 109 pp., 1975, Rensselaer Polytechnic Institute (Lawrence K. Wang).

"Process Improvement of Bubble and Foam Fractionation Systems", David F. Langley, 199 pp., 1975 Rensselaer Polytechnic Institute (Lawrence K. Wang).

"Oxygen Effects on Stoichiometry of Bacterial Metabolism", Marc Andrew Curtis, 62 pp., May 1976, Rice University (W.G. Characklis).

"Ozonation of Tannic Acid", Jancie Marthe LeBlanc, 66 pp., May 1976, Rice University (W.G. Characklis).

"Control of Microbial Fouling in Circular Tubes with Chlorine", Gunnilla Norrman, 110 pp., May 1976 Rice University, (M.A. Kessick).

"A Study of Virus Absorption to Filter Surfaces at Low pH", Ray Arnold Wagner, 81 pp., May 1976, Rice University, (C.H. Ward).

"Inactivation of Solids-Associated Virus by Hypochlorous Acid", Charles Howard Stagg, 129 pp., May 1976, Rice University, (none listed).

"Suspended Growth Biological Denitrification", Christopher Davis, 49 pp., December 1975, University of Texas (Joseph F. Malina, Jr.).

"Investigation of Uptake Characteristics of Various Clays for Selected Heavy Metals", Joseph M. LaPlante, 91 pp., December 1975, University of Texas (Earnest F. Gloyna).

"Effect of High-Pressure Oxygenation on Dissolved Oxygen Content and Microbial Substrate Utilization", James D. Mierschin, 95 pp., August 1975, University of Texas (Joseph F. Malina, Jr.).

"Transient State Biological Kinetics", Bruce L. Wiland, 86 pp., December 1975, University of Texas (Michael J. Humenick).

"The Kinetics of Some Nitrate Nitrifiers Isolated from Activated Sludge", Emmanuel A. Anyahuru, 254 pp., December 1975, University of Toronto (P.H. Jones).

"Behaviour of Wastewater Sludges and Chemical Wastewater Sludges During Aerobic Digestion", M.F.D. Homoda, 345 pp., December 1975, University of Toronto (J. Ganczarczyk).

"Laboratory Techniques for Evaluating Batch Floation of Activated Sludge", Ronald Gehr, 130 pp., December 1975, University of Toronto, (J.G. Henry).

"Aerobic Digestion of Sludges Resulting from Pickle Liquor Addition to Mixed Liquor", Henry R. Jakubiec, 73 pp., December 1975, University of Toronto, (J. Ganczarczyk).

"Low Temperature Anaerobic Digestion of Diluted Human Excreta", Chin-Choon Khor, 75 pp., December 1975, University of Toronto (G.W. Heinke).

"Effects of Solids Concentrations and Digester Operations on the Digestion Kinetics and Physical Characteristics of Waste Activated Sludge", Hong Lit Wong, 157 pp., December 1975, University of Toronto (J. Ganczarczyk).

"Principles and Practices of Sludge Incineration with Application to Incinerators No's. 6 and 7 at the Main Treatment Plant, Ashbridge's Bay", N.J. Perkins, 140 pp., June 1976, University of Toronto (J. Ganczarczyk).

"Flocculation of Dispersed Growth with a Cationic Polyelectrolyte", A. Rashid Quraishi, 85 pp., December 1975, University of Toronto (J.G. Henry).

"Wastewater Treatment with Activated Carbon", C.J. Lu, 60 pp., 1975, University of Missouri-Rolla (D.E. Modesitt).

#### Water Management

"Hydrologic-Land Use Interactions in a Florida River Basin", Philip B. Bedient, 262 pp., June 1975, University of Florida (Wayne C. Huber).

"Integrated Approach to Urban Wastewater Management", Sheikh M. Hasan, 230 pp., March 1976, University of Florida (James P. Heaney).

"Remote Sensing of Water Quality: A Method to Delineate Aquatic Vegetation Using Color Aerial Photography", Glen Sheppard, 69 pp., May 1976, University of Kansas (C.E. Burkhead).



"Application of the Frequency-Equivalent Non-Linear Hydrograph Methodology to Urbanized Watersheds", Joseph Wallace, 117 pp., May 1976, University of Kansas (R.L. Smith).

"The Development of Costs Recovery Scheme: Suggested Approaches for Municipal or Regional Wastewater Treatment Plants", Alexander A. Thomopolus, 130 pp., May 1976, University of Kansas (R.E. McKinney).

"Cost and Energy Requirements of Sludge Handling and Ultimate Land Disposal Methods", Charles R. Bristol, 125 pp., August 1975, University of Michigan (Mackenzie L. Davis).

"The Origin and Development of Community Environmental Quality Indices", Christopher J. Reimer, 94 pp., August 1975, University of North Carolina-Chapel Hill (Morris A. Shiffman).

"An Analysis of Public Participation in the Natural and Scenic Rivers Program", Susan M. Smith, 134 pp., December 1975, University of North Carolina-Chapel Hill (Morris A. Shiffman).

"Community Water Use on Indian Reservations", Ralph L. Hogge, 63 pp., August 1975, University of North Carolina-Chapel Hill (Daniel A. Okun).

"A Study of the Water Resources and Water Reuse Possibilities in the Research Triangle Area of North Carolina", Eric T. Laurin, 105 pp., May 1976, University of North Carolina-Chapel Hill (Daniel A. Okun).

"Trends in Sludge Production and Disposal", Henry J. Hervol, 519 pp., May 1976, University of Texas (Joseph F. Malina, Jr.).

"Impact on Water Quality and Water Resources of Nuclear Power Plants in Texas", John H. Richardson, 270 pp., August 1975, University of Texas (Gerard A. Rohlich).

"A Non-Linear Programming Model for Evaluating Water Supply Policies in the Texas Coastal Zone", Rafael A. Rios, 110 pp., August 1975, University of Texas (Joseph F. Malina, Jr.).

"Conceptual Development of a Regional Water Quality Model", Eloy Urroz, August, 1975, University of Texas (E. Gus Fruh).

"Recovery and Utilization of Energy from the Anaerobic Treatment of Municipal Wastewater Sludges", Edward F. Galwardi, 236 pp., December, 1975, University of Texas (J.F. Malina, Jr.).

"Regional Methodolgy to Estimate Point and Non Point Pollutational Loads Dicharged into a Stream", Raul Cuellar-Chavez, May 1976, University of Texas, (J.F. Malina, Jr.).

"Storage as a Strategy for the Management of Stormwater from Residential Areas", M.P.H. Murrey, 147 pp., December 1975, University of Toronto (J. Ganczarczyk).

"Problems of Urban Growth (2 vols., Pt. 1 and Pt.2 and 3)", A. Desmond Turner, 500+ pages, June 1976, University of Toronto (A.P. Bernhart).

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### PUBLICATION OF THESIS TITLES

#### Time Interval:

July 1, 1976 to June 30, 1977

#### Classification of Titles:

Air Pollution  
Agricultural Waste Management  
Instrumental Methods of Analysis  
Industrial Waste Treatment  
Land Treatment  
Non Point Pollution  
Rivers, Estuaries and Lakes  
Water and Wastewater Treatment  
Water Management

You may also use other classifications if there are a sufficient number of titles.

#### Format

"Title of Paper", Name of Author, (Doctorial or Masters, X pp., Month, Year, Name of University (Name of Faculty Advisor).

#### Comments:

Since the availability of documents vary, persons interested in a specific publication will be asked to contact the Faculty Advisor directly.

#### Deadline:

Submit by August 15, 1977 to:

Stanley L. Klemetson,  
Editor, AEEP Newsletter  
Department of Civil Engineering  
North Dakota State University  
Fargo, North Dakota 58102  
701-237-7244



## A.E.E.P. VISITING LECTURER

At the Purdue Industrial Waste Conference, the Board of Directors of AEEP decided to request nominations from the membership for the 1977-78 Visiting Lecturer. Please submit your nominations with supporting information to John F. Ferguson, University of Washington.

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## ADDRESS CHANGES

Keep your records up to date to receive the AEEP Newsletter and other mailings. Contact AEEP Secretary-Treasurer, Leslie Grady, Purdue University.

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## WELCOME TO NEW AEEP MEMBERS

Vincent P. Olivieri  
Department of Environmental Health Engineering  
The Johns Hopkins University  
School of Hygiene & Public Health  
615 N. Wolfe St.  
Baltimore, MD 21205

William J. Snodgrass  
Department of Chemical & Civil Engineering  
McMasters University  
Hamilton, Ontario, Canada

Ronald F. Wukasch  
Department of Civil Engineering  
Civil Engineering 308  
Purdue University  
Lafayette, Indiana 47907

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## NEW ADDRESS FOR AEEP NEWSLETTER

After August 15, all correspondence with the Editor of the AEEP Newsletter should be directed as follows:

A.E.E.P. NEWSLETTER  
Stanley L. Klemetson, Editor  
Civil Engineering Department  
Colorado State University  
Fort Collins, Colorado 80523  
(303) 491-5048

## SHORT COURSE ON THE APPLICATION OF COMPUTER PROGRAMS IN PRELIMINARY DESIGN OF WASTEWATER TREATMENT FACILITIES

The USEPA in conjunction with the Pritzker Department of Environmental Engineering, Illinois Institute of Technology is offering a one week short course August 15-19 on the application of Computer Programs in Preliminary Design of Wastewater Treatment Facilities. The course will be presented in a workshop format with topics including:

1. An optional fortran review
2. the role of computers in preliminary design
3. hands on use of the USEPA Executive Program for Preliminary Design to:
  - a. determine the effect of design criteria on cost and performance
  - b. evaluate the effect of multiple process flow schemes on cost and performance
  - c. determine the effect of economic parameters on cost and performance
4. modification of the USEPA Executive Program by the participant to:
  - a. more accurately represent costs
  - b. add or modify subroutines to fit the users preference
5. stream impact analysis in conjunction with preliminary design

A fee of \$250. is required for the course which covers five luncheons, coffee, and short course materials. For additional information please contact:

Dr. James W. Male  
Pritzker Department of Environmental Engineering  
Illinois Institute of Technology  
Chicago, Illinois 60616  
Telephone: 312/567-3537

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## POSITIONS AVAILABLE

## University of Delaware

The Department of Civil Engineering at the University of Delaware is seeking two faculty members for this fall. One opening is for a faculty member with a Ph.D. in the area of Environmental Engineering. Duties require instructing at the undergraduate and graduate levels. The ability to direct graduate students and maintain a strong independent research program is essential. Preference will be given to those who are competent in the biological aspects of environmental engineering. However, others are encouraged to apply. Rank and salary commensurate with qualifications.

The second position is for an Assistant Professor in Environmental Fluid Mechanics (waterbody hydrodynamics, water quality modeling). Duties include teaching undergraduate and graduate courses, participation in a research program, and the supervision of graduate students. Opportunity exists to work with Environmental and Ocean Engineering graduate research programs. Ph.D. required.

Interested persons are invited to send detailed resumes and the names of at least three references to:

Ralph R. Rumer, Jr., Chairperson  
Department of Civil Engineering  
University of Delaware  
Newark, Delaware, 19711

Closing date for applications is July 31, 1977. The University of Delaware is an affirmative action/equal opportunity employer.

## University of Kentucky

The Department of Civil Engineering at the University of Kentucky is seeking to fill a faculty position at the Assistant or Associate Professor rank. Applicants must have Ph.D. and at least one degree should be in Civil Engineering. Rank and salary will depend upon qualifications and experience. Appointment date of August 15, 1977 is desired, but a later date may be considered.

Applicants should have background in the following areas as related to water resources systems: hydrology, modeling, planning, systems analysis, impact analysis, and engineering economy. The person filling this position will teach and conduct research in these areas.

The University is an Affirmative Action-Equal Opportunity Employer. Selection will be made on the basis of

qualifications and without discrimination on any basis.

Resumes and salary requirements should be sent to:

Dr. Edward G. Foree  
Chairman, Search Committee  
Department of Civil Engineering  
University of Kentucky  
Lexington, Kentucky 40506

## Michigan Technological University

Civil Engineering-Permanent faculty position available September 1, 1977 or November 22, 1977. Assistant Professor of Environmental Engineering to teach undergraduate and graduate courses in the sanitary engineering area. Candidates must possess an earned doctorate and be a registered professional engineer or eligible for registration. Successful applicants will be expected to develop a program of funded research. Send resumes in confidence to Civil Engineering Department, Michigan Technological University, Houghton, MI 49931. An equal opportunity educational institution/equal opportunity employer.

## ADDITIONAL INFORMATION

Applicants should preferably have:

1. B.S. degree in an engineering field.
2. Earned doctorate in civil, environmental or other related engineering field.
3. Major interest in water quality or sanitary engineering design and research.
4. Secondary interests in the areas of solid and other residual waste management, water chemistry, environmental protection, and water resources.

## University of Minnesota

TENURED FACULTY POSITION-ENVIRONMENTAL ENGINEERING (WATER RESOURCES)-SEPT., 1977. A tenured position is available in the Department of Civil and Mineral Engineering, beginning preferably September 16, 1977, in the area of water supply and pollution control engineering, emphasizing water and wastewater treatment. Duties will include teaching at the undergraduate and graduate levels. A strong commitment to research is expected. Applicants with a B.S. degree in Engineering and Ph.D. in Environmental Engineering (Water Resources) are preferred. Please submit letter of application, resume and names of three professional references to Professor C. Fairhurst, Head, Department of Civil and Mineral Engineering, 112 Mines and Metallurgy Building, Minneapolis, Minnesota 55455. The University of Minnesota is an equal opportunity and affirmative action employer.

## North Dakota State University

The Civil Engineering Department of North Dakota State University has two openings for full time positions in the field of Sanitary Engineering. The professional rank and salary is open and depends on professional qualifications, education and experience.

Professional experience and a Masters Degree in Sanitary Engineering are required. A Ph.D. in Sanitary Engineering is desirable. A minor in Fluid Mechanics is also desirable but not required. Faculty member duties include undergraduate and graduate courses in Sanitary Engineering and Waste Resources, research activities in those areas and direction of M.S. student research.

The Civil Engineering Department has eight full time faculty positions and serves an enrollment of 160 undergraduate students and 15 graduate students. The Civil Engineering Faculty are active in teaching, research, extension, and consulting. The College of Engineering and Architecture has six departments with a combined enrollment of 1050 students.

North Dakota State University with an enrollment of about 7000 students in eight Colleges is located in Fargo, North Dakota.

Applicants should send their resume, the names of three professionals and a transcript of their college work to:

Dr. James L. Jorgenson, Chairman  
Department of Civil Engineering  
North Dakota State University  
Fargo, North Dakota 58102

--AN EQUAL OPPORTUNITY EMPLOYER--

## University of Texas - El Paso

The Civil Engineering Department of the University of Texas at El Paso has an opening on its Faculty beginning in the Fall of 1977 for an Assistant Professor or Visiting Assistant Professor. The latter appointment is for one year.

### ASSISTANT PROFESSOR

Responsibilities include the teaching of undergraduate and graduate courses, participation in research, and responsibility for the development of the Soil Mechanics and Foundations Laboratory. Applications are invited from qualified persons with the Bachelor's and Ph.D. degree in Civil Engineering. Applicant should be a registered professional engineer or in the process of becoming registered and have a proven record in university teaching and research.

### VISITING ASSISTANT PROFESSOR

Responsibilities include the teaching of undergraduate courses, participation in research, and development of the Soil Mechanics and Foundations Laboratory. Applicants should have BS and MS degrees in Civil Engineering. A Ph.D. degree or equivalent degree is required with Soil Mechanics area of study desirable.

The University of Texas at El Paso is an Affirmative Action and Equal Opportunity Employer and encourages applications from women and minority members.

Applications should be submitted by July 15, 1977 to:

Dr. Herbert H. Bartel, Jr.  
Chairman of Civil Engineering  
The University of Texas at El Paso  
El Paso, Texas 79968

## West Virginia University

**ASSISTANT/ASSOCIATE PROFESSOR- FACULTY MEMBER qualified in Environmental Engineering (Air Pollution Control) Planned to be available August 16, 1977.**

Applicant should have a strong background and interest in air pollution control engineering as related to environmental engineering and be interested in teaching various aspects of these subject areas at the undergraduate and graduate levels with emphasis on the practice of engineering and interaction with other members of the environmental group concerned with water pollution, water resources and solid waste management.

Applicants should possess a doctoral degree with an undergraduate degree in civil engineering or an appropriate allied field of engineering. Responsibility will include teaching at the undergraduate and graduate levels in the civil engineering program and the initiation and direction of sponsored research. Teaching and/or previous experience in the practice of engineering as well as professional registration or potential for registration are desirable.

The Department of Civil Engineering has a faculty of 17 professors and offers degrees at the BS, MS, and PhD level with specialization in the areas of environmental engineering, soils and foundations engineering, structural engineering and transportation systems engineering.

Qualified applicants should send a complete resume, preferably including both courses taken and courses taught, along with names and addresses of three references, to:

Dr. William J. Wilhelm, Chairman  
Department of Civil Engineering  
West Virginia University  
Morgantown, West Virginia 26506  
Telephone: (304) 293-3031/2

West Virginia University is AN EQUAL OPPORTUNITY-AFFIRMATIVE ACTION EMPLOYER



EDITOR

Stanley L. Klemetson  
Department of Civil Engineering  
North Dakota State University  
Fargo, ND 58102  
701/237-7244

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