



Newsletter

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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.

**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.

**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).

