



PRESIDENT'S CORNER

Paul Bishop really screwed up. As my predecessor, he should have said, "Aarne, you have only a year to get things done, so step lively." If he had said that, I might have heeded his advice. On the other hand, I most likely would have ignored him (my usually response to anything Paul says) because a year is such a long time, and what I wanted to do as the president of AEEP seemed so modest.

Now looking back at the year I realize both how short the year is and how difficult it is to get things done. The most I can take credit for as I prepare to step down this October is that we got a few things headed in the right direction. With a lot of work and cooperation, some of these things may actually come to pass. Here are a few items:

1. The Environmental Engineering Education Conference is scheduled for the summer of 1996 in Orono, Maine. This conference will be co-sponsored with the American Academy of Environmental Engineers. Chet Rock is in charge, working with Joe Langnese in the planning of this conference.
2. AEEP was founded as a purely volunteer organization, and continues to function this way. None of our officers receive compensation, nor do we hire any contract people to assist us in the work of maintaining mailing lists, storing and distributing publications, collecting dues, keeping books, submitting tax forms, organizing workshops, writing and mailing newsletters, and on and on. It is amazing, in retrospect, that this organization has continued to function with the efficiency that it has.

However, we are no longer a small club of a couple dozen like-minded pioneers. Our membership is approaching 600, and we have clearly moved into a new tier of professional organizations. It is unlikely that in the future we can count on the kind of volunteer time that our present secretary, Ed Bouwer, and treasurer, Mark Rook, presently donate to the organization. Something has to be done.

And yet, we don't want to abandon the kind of chumminess that makes an organization like AEEP so attractive. We want to give our time to AEEP, and to participate in its programs, and the more we do on a volunteer basis, the better it is for all.

Hence the "Help Wanted" ad that Steve Randtke put out. If we could find some secretarial and bookkeeping support at a reasonable price, then we could establish a

permanent secretariat instead of a floating one. A permanent secretariat offers many advantages to our organization, but it will also change the character of AEEP. Is this what we want to do?

3. Who are we, really? Are we a bunch of dirty water people, or are we truly the eclectic environmental engineering group we often advertise? We have established a task force, under Linda Abriola, to try to come to grips with this issue. The answer will set the direction of AEEP for many years.
4. Finally, I believe we are at a watershed in terms of the organization of professional environmental engineering. As we all know, every profession is suddenly an environmental profession (I hear there is an environmental barber in California who is giving organic haircuts). After many years of wandering in the wilderness, environmental engineering is suddenly the hot degree. As more and more of our most talented students opt for this field, the profession will continue to grow and mature. But have we created the proper organizational structure for this profession? By all accounts, the answer seems to be NO. AEEP certainly does not speak for the profession, and neither does the American Academy of Environmental Engineers, the Air and Waste Management Association, and certainly not the American Society of Civil Engineers.

What is needed is a concerted push by interested professionals who are willing to lay aside their personal biases and historical animosities and create a truly comprehensive and effective new organization of environmental engineering. My vision is that AEEP will be a proud member of such a group. We would maintain our autonomy with regard to programs, and participate fully in the accreditation process. It seems to me that if we don't do this now, while the field is still growing, we will never get it done.

Steve Randtke is the incoming president of AEEP. Steve, here's a word of advice "It's a very short year. Step lively!"

Aarne Vesilind

AEEP NEWS AND ANNOUNCEMENTS

AEEP Annual Luncheon and Meeting at the 1994 WEF Conference

When: Monday, October 17, 1994, 12 noon-2:00 p.m.
Where: Chicago Downtown Marriott Hotel, Ballrooms F&G
Program: Awards and Reports by AEEP Officers
Cost: \$25

This is the traditional annual luncheon and meeting of the AEEP membership. Because the luncheon is a sit-down affair, reservations are required. Please register and pay for the luncheon in advance, as it is time consuming to collect money at the door. Send your reservation and check (payable to AEEP) to Steve Randtke using the form found on page 10 of this issue of the AEEP Newsletter.

Meet and Greet Reception sponsored by Lewis Publishers

Monday, October 17, 1994
5:00 to 8:00 p.m.
Chicago Downtown Marriott Hotel
Ballrooms F&G

All AEEP members, but especially new members, are encouraged to attend and discuss their ideas regarding the future goals and directions of AEEP. Plan to come and meet old friends and make new ones. The officers and directors look forward to seeing you at this popular event.

1996 Environmental Engineering Education Conference University of Maine Orono, Maine

The organizational committee, co-chaired by Chet Rock (AEEP) and Joe Lagnese (AAEE), has initiated the planning process for the next educational conference. The conference will be scheduled for June, July or August, depending upon other environmental conferences and the wishes of AEEP and AAEE members. In addition, ideas and concepts are welcomed and should be sent to Chet Rock, 5711 Boardman Hall, University of Maine, Orono, ME 04469-5711 or Joe Lagnese, Jr., 3066 Woodland Road, Allison Park, PA 15101.

AEEP Workshop Sponsored by John Corollo Engineers "Pollution Prevention"

Tuesday, October 18, 1994, 2:00-4:00 p.m.
Room M-2, McCormick Place North
Chicago, Illinois

Featured Speaker: Harry Freeman, USEPA
Panel Discussion to follow presentation
Panel Members:

Bob Baillod, Michigan Tech.
Paul Bishop, University of Cincinnati
Greg Keoglian, National Pollution Prevention Center, University of Michigan
George Hoag, Pollution Prevention Research & Development Center, University of Connecticut, Storrs

The purpose of this seminar is to introduce the principles of pollution prevention and then discuss how they relate to environmental engineering. Will environmental engineers be significantly involved in pollution prevention efforts? Do we need to include it in our curricula? How will we include the subject, as supplemental material in selected courses or as separate courses?

ALL INTERESTED INDIVIDUALS ARE WELCOME
REGISTRATION IS FREE

Congratulations to John Cleasby, Distinguished Professor Emeritus, Iowa State University on his unanimous approval as an Emeritus Member in AEEP.

Deadline for January 1995 AEEP NEWSLETTER

Please submit articles for the
January 1995
issue of the AEEP Newsletter to:
Chet A. Rock

University of Maine
Dept. of Civil & Environmental Engineering
5711 Boardman Hall
Orono, ME 04469-5711
FAX: (207) 581-1215
Phone (207) 581-2170
EMail - chetrock@maine.maine.edu
before Friday, December 2nd.

1994-1997 AEEP Board of Directors' Election

Appiah Amirtharajah of the Georgia Institute of Technology, JoAnn Silverstein of the University of Colorado, and James Young of The Pennsylvania State University, were elected to board terms which begin in two months in Chicago and continue through 1997. Our congratulations to each of them!

LETTER TO THE EDITOR (reprinted from ASEE/Civil Engineering Division, March 1994 Newsletter)

On Friday, November 12, 1993, I attended a symposium in Chicago sponsored by the Board of Engineering Education of the National Research Council. The symposium was concerned with Major Issues in Engineering Education. I represented ASCE as chair of the Education Activities Committee. This Board, chaired by Dr. Karl Pister, Chancellor, University of California/Santa Cruz, is working on a major position paper. They will be holding three more symposia (Dallas, California, and Washington, DC) similar to the one I attended in Chicago. The purpose of these four meetings is to obtain feedback from representatives of education, industry, and professional societies on the draft of their very interesting position paper (about 80 pages in length). The final document will be widely distributed next year and the Board hopes that it will be an effective agent for change in engineering education.

Considering the draft of the position paper and the discussions at the first symposium, there are some very interesting developments, projects, and predictions for the next decade or two concerning engineering education. I thought it would be useful to share some of them with the members of the CE division of ASEE.

1. **The Student Pipeline:** Although many would like to increase the numbers in the student pipeline, all of those representing industry and many of the educators at the symposium strongly urged that **the quantity not be increased; but instead, work on the quality** of those in the pipeline. The industry representatives thought that the current downsizing of industry will be somewhat permanent for the foreseeable future, thus more engineers will not be easy to absorb into the workplace, but better engineers will. **There were quite a few people at the meeting who thought the B.S. degree in engineering is or will become a preprofessional degree** leading to professional study in many areas; law, medicine, business as well as advanced engineering.

2. **The Undergraduate Engineering Experience:** Sam Florman, contractor and writer, led a very interesting hour on the undergraduate engineering experience. He thought it was unfortunate that everyone wanted to be like MIT. He suggested it was like football ratings, where all 250 or so engineering schools want to be in the "top ten." He further suggested that diversity in degree programs is very important and that each engineering college should focus on what it does best or wants to do best and stop worrying about whether or not it is in the "top ten." The industrial representatives wanted to know why we

educators had so many programs at the undergraduate level. They suggested that specialization; should occur at the advanced level not at the undergraduate level. They wanted a broadly educated engineer who could think, solve problems, communicate, and work with others. As far as curriculum was concerned the buzzword at the symposium was "think global." Reflecting on what I heard at this meeting and what I read in the position paper, **our programs in civil engineering (1) are probably too specialized at the undergraduate level, (2) offer too many undergraduate courses, (3) do not integrate very well nonengineering studies, and (4) perhaps do not incorporate global thinking.**

3. **Graduate Engineering Education:** Perhaps the most interesting projection and prediction was that **the demand for Ph.D.'s will continue to decrease** and the demand for M.S. degree graduates will hold its own. The industrial representatives at the symposium suggested that with downsizing, the need for Ph.D. degrees in companies like DuPont, for example, will be an order of magnitude smaller. With decreases in the defense budget continuing, the demand for Ph.D.'s will decrease further. And yet most participants felt that the M.S. degree, as a result of an evolutionary process, is or will become, depending on the profession and/or the industry, the first professional degree. **It was suggested by many at the meeting that we educators should concentrate on the M.S. degree and make it more a professional degree and less of a research degree. The implication was -- leave research for the Ph.D. degree.**

4. **State of the Engineering Professoriate:** The most interesting and perhaps insulting comment I heard on this subject was from an industrialist who suggested that the days of the six-figure salaried college professor, teaching ten non paying graduate students, with little or no academic year salary offset, are numbered. I believe there is no question that with the decrease in the cold war, defense spending will decrease and there will be no "civilian" spending counterpart. Excessive spending for science and technology always happens in war time, perhaps even in cold war time, or when a perceived enemy does something spectacular like "sputnik." Spending for science and technology is not excessive in peace time. **Thus, almost everyone at the symposium agreed that research expenditures for science and technology were definitely not going to increase but probably decrease substantially.**

Peter Hoadley
Chair ASCE/EdAC

Environmental Engineering: Creation of an Electronic Textbook

*John C. Little and Nancy G. Love
Virginia Tech
Blacksburg, Virginia*

Environmental engineering is experiencing explosive growth while evolving into an interdisciplinary field that synthesizes knowledge from a wide range of traditional subjects. This has led to two problems in our undergraduate teaching program. First, knowledge is accumulating so rapidly that new textbooks are soon out of date. Second, increasing numbers of students with diverse backgrounds are competing to gain access to our program. To meet this challenge, we plan to redesign our Introduction to Environmental Engineering (CE 3104) course to emphasize fundamental concepts while providing a broad overview of the field. The restructured course must allow good students from different engineering and scientific disciplines to rapidly come to grips with the broad principles of environmental engineering. In addition, the course must evolve to keep pace with the changing face of the field. The purpose of this project is to develop a computer based Electronic Textbook that will serve as the evolutionary backbone for the course.

The computer based Electronic Textbook will be created in several stages. Initially we will prepare an Electronic Notebook suitable for classroom presentation using multimedia tools. Illustrative examples using interactive mathematical models, diagrams, photographs, animation and video will be used to help students conceptualize environmental phenomena such as diffusion, sedimentation, and subsurface transport. This presentation strategy will minimize classroom time spent conveying information, and maximize class time spent explaining concepts and working illustrative problems. The beauty of using the electronic format is that the text itself evolves more naturally through the teaching and learning process. After two iterations in the teaching cycle, the Notebook will be expanded into a more detailed self-explanatory Electronic Textbook that will be available for reference outside of the classroom (and outside of Virginia Tech). The content of the Electronic Notebook will be developed this fall along with a few example visualization modules. The redesigned class will be offered for the first time during the Spring 1995 semester.

Comments, suggestions and inquiries related to this project can be directed to John Little (jcl@vt.edu) and/or Nancy Love (nllove@vt.edu) at:

Department of Civil Engineering
Virginia Tech
Blacksburg, VA 24061-0105
(703) 231-8737 (J. Little)
(703) 231-3980 (N. Love)

Update on the National Institute for the Environment

*David E. Blockstein, Ph.D.,
ornithologist & senior scientist, CNIE
David Lee, journalism major
& staff writer for CNIE*

The proposal to create a National Institute for the Environment has made progress since P. Aarne Vesilind wrote about it in his President's Corner (April 1994). Senator Tom Daschle (D-SD) has introduced S 2242 to create NIE, along with nine bipartisan cosponsors, including Barbara Mikulski (D-MD), who chairs the subcommittee that would appropriate money for the NIE. In the House, HR 2918 has 75 bipartisan cosponsors, led by George Brown (D-CA), chair of the House Science Committee, and Jim Saxton (R-NJ). Three former EPA Administrators recently wrote to President Clinton endorsing the NIE. William Reilly, William Ruckelshaus, and Russell Train stressed that "merely adapting existing research programs will not solve the problems of the current, fragmented system...we strongly support the proposed [NIE]...which promises to provide, finally, a firm scientific foundation on which our country's environmental policy can stand."

The governing board of the NIE will be comprised of scientists, environmentalists, businesses, state and local governments, citizen groups, and others to set research priorities and goals. This inclusiveness has led groups including the U.S. Conference of Mayors and the National Association of Attorneys General to recently endorse the NIE concept. In addition Congressional support, the NIE proposal has been endorsed by 35 universities, over 70 scientific societies (including the AEEP), and 27 environmental organizations.

For more information, contact Bart Thomas, CNIE Network, Department of Biological Sciences, University of Illinois at Chicago, 845 West Taylor Street, Chicago, IL 60607-7060. Phone: (312) 413-0023 or fax: (312) 996-2017. Internet: h.barton.thomas@uic.edu

Request for Syllabi From Unique and Innovative Courses In Environmental Engineering

Teaching in the Environmental Engineering field is challenging, and many professors have responded by using new and innovative approaches in the classroom. In order to help professors at different institutions share their ideas on innovative courses, AEEP has formed a Syllabus Committee to help disseminate course outlines. If you are interested in sharing your course outlines with others, please prepare your outline in the format shown on page 11 of this newsletter (limit 1 page please). Mail a hardcopy and diskette containing the information (Wordperfect or ASCII format) to: Bruce Logan, Dept. of Chem and Envi. Eng., Bldg. 72, Rm. 306, University of Arizona, Tucson, AZ 85721. Course outlines will be compiled and handed out as a bound packet at the next AEEP conference.

EMPLOYMENT OPPORTUNITIES

The American University in Cairo

The American University in Cairo invites applications for one faculty opening in environmental engineering at the Assistant, Associate, or Full Professor level to teach, in English, M.Sc. level courses in air and water pollution, waste water management, solid and hazardous waste, environmental impact assessment, industrial pollution prevention and waste minimization, and cleaner production. The American University in Cairo, a private American institution of higher education founded in 1919, is located in Cairo, Egypt. The Department of Engineering offers five-year B.Sc. degree programs in Mechanical Engineering and Construction Engineering and an M.Sc. degree in Engineering with a choice of concentration in one of four areas: materials and manufacturing, industrial, design, and environmental engineering. The Ph.D. and evidence of excellence in teaching and research are required. Industrial experience is desirable. Teaching load is three courses per semester. Appointment is for two years (renewable) beginning September 1995. Rank and salary are based on qualifications and experience. For expatriates, housing and round-trip air travel, plus schooling for two children, are included. Send letter of application with curriculum vitae to: Dean Amr Abdel Hamid, The American University in Cairo, 866 United Nations Plaza, Suite 517, New York, NY 10017, by November 15, 1994.

Ohio University

The Russ College of Engineering and Technology at Ohio University invites applications from outstanding candidates for a faculty position in the area of environmental engineering with a specialization in pollution prevention. The position is tenure-track and will be at the assistant professor level. An earned Ph.D. in an engineering discipline with a demonstrated coordinate and develop undergraduate and graduate courses in pollution prevention area for students in both the Civil and Chemical Engineering Departments. The successful candidate will be expected to develop a nationally and internationally recognized research program in environmental pollution prevention. The research area will augment and/or complement the ongoing research projects in the College's thriving Center for Geotechnical and Environmental Research.

Applicants should submit a complete resume, including a statement of teaching and research interests, and three references to Dr. Joseph Essman, 150 Stocker Center, Russ College of Engineering, Ohio University, Athens, Ohio 45701. Screening of the candidates will begin immediately, and will continue until the position is filled.

Ohio University is an equal opportunity/affirmative action employer.

Petrochemical Industry

Professor of Environmental Engineering - Lenox, Massachusetts company seeking Professor of Environmental Engineering/Technical Assistant for Petrochemical Industry/ Technical Assistant for R&D to perform duties which include but are not limited to Professor of Environmental Engineering instructing at the Master's level Graduate Program; assist Institute clients and graduate students in the areas of water and waste water treatment in the petrochemical industry or other industries as may be applicable with special emphasis on flotation devices; assist the Institute Research and Development Department on projects as assigned. Writing and presentation of papers at seminars and conferences or for publication. Travel as required for the execution of responsibilities as assigned. Ph.D. in Chemical Sciences required. Must have specialized education and experience in waste water technology and flotation methods. Must have experience in international flotation and filtration treatment techniques and applications.

Forty hours per week, from 9:00 a.m. to 5:00 p.m., overtime as-needed, no overtime paid. Salary \$37,500 per year. Send resumes to: Case #30765, P.O. Box 8968, Boston, MA 02114.

Environmental Engineer Technical Assistant - Petrochemical Industry is also looking for an environmental engineer technical assistant for R&D to perform duties including but not limited to Environmental Engineering at the Doctorate level; assisting Institute clients and graduate students in the areas of water and waste water treatment process industry or other industries as may be applicable. Utilizing existing theoretical concepts of water and waste water treatment processing technology, flocculation/coagulation, flotation, filtration, sedimentation, dewatering and through understanding of chemical and physical process concepts to develop experimental methods, equipment, and procedures to investigate potential solutions to problems in flocculation/coagulation, flotation, filtration and dewatering as applied to water and waste water treatment processes. Assisting the Institute's Research and Development Department on projects as assigned; writing and presentation of papers at seminars and conferences or for publication. Travel as required for the execution of responsibilities as assigned. Must have specialized knowledge and experience in waste water technology and solid liquid separation. Must be able to analyze experiments results using advanced statistical methods to obtain both fundamental and applied correlation using computers; develop related computer programs and mathematical models to describe physical phenomena; participate in and advise other members of the unit on ways to design experiments and analyze information obtained. Must have knowledge of concepts related to principles and practices in water and waste water treatment, solid-liquid separation and a thorough knowledge of advanced statistical techniques for experimental design and data analysis (Chemometrics).

continued...

Forty hours per week from 9:00 a.m. to 5:00 p.m., overtime as-needed, no overtime paid. Salary \$38,500 per year. Send resumes to: Case #40214, P.O. Box 8968, Boston, MA 02114.

University of Alberta

Applications are invited for a tenure-track position at the assistant professor level in the environmental health sciences with an emphasis on human exposure assessment to environmental contaminants, toxicology and health risk assessment. Interested candidates should have a strong research background in quantitative trace contaminant measurement and analysis with some training or experience in the life sciences. Training or experience in industrial hygiene would be an asset. The position will be affiliated with the Eco-Research Chair in Environmental Risk Management, located within the Environmental Occupational Health Programs of the Faculty of Medicine.

Candidates will be expected to develop an active laboratory-based research program in areas such as novel methods of contaminant exposure assessment, biomarkers, toxicity-directed analytical approaches or quantitative risk assessment, perform in a collaborative interdisciplinary research environment, teach in the areas of environmental chemistry, contaminant exposure assessment, health risk assessment or introductory toxicology and participate in the training of graduate students. The current salary range for assistant professor rank is \$40,035 to \$57,003 with the appointment level being commensurate with qualifications and experience. Complete applications should be received by September 15, 1994. Effective date of employment is expected to be January 1, 1995 or a mutually negotiated date. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents.

A letter of application accompanied by a full curriculum vitae, a description of research interests and full names, addresses, telephone and fax numbers for three referees should be directed to: Dr. Steve E. Hrudey, Eco-Research Chair in Environmental Risk Management, Environmental Health Program, Faculty of Medicine, 13-103 Clinical Sciences Building, University of Alberta, Edmonton, Alberta T6G 2G3, telephone (403) 492-6807; fax (403) 492-0364.

The University of Alberta is committed to the principle of equity in employment.

The University encourages applications from aboriginal persons, disabled person, member of visible minorities and women.

United States Air Force Academy

The Department of Civil Engineering at the United States Air Force Academy anticipates establishing a new Full Professor position in Environmental Engineering beginning July 1, 1995. The initial appointment will be for three years. Reappointment will be based on qualifications, performance, and vacancies.

The Air Force Academy is an undergraduate institution which awards the Bachelor of Science degree as part of its mission to develop and inspire air and space leaders with vision for tomorrow. Applications are invited from candidates with substantial experience and strong interests in undergraduate course development, use of computers and other advanced technology to enhance education, and using the Academy's laboratory facilities to conduct environmental engineering research. Preference will be given to candidates who have demonstrated excellence teaching undergraduate environmental engineering topics to students pursuing nontechnical, as well as technical, academic majors, and an established record of innovation and research in the field. Industrial experience is highly desired. An earned doctorate in environmental engineering or a closely related field is required. The selected candidate will be subject to a security investigation and must meet eligibility requirements for access to classified information. Salary will be commensurate with experience and qualifications. Send a letter of application, curriculum vitae, and names, addresses and phone numbers of three references familiar with your professional work to HQ USAFA/DPCS, (Attn: Mrs. Den Herder), #95-09 CE, 8034 Edgerton Drive, Suite 240, USAF Academy, CO 80840-2215. Deadline for application is November 30, 1994.

*The Federal Government is an equal opportunity employer.
U.S. citizenship required.*

Wright State University

The Department of Geological Sciences invites applications for a tenure track faculty position at the assistant professor level starting January 1995. Ph.D. or equivalent is required at the time of appointment. A background in site remediation and organic contaminant fate and transport is desirable, as are degrees in both geosciences and engineering. The successful candidate will join a 12-member faculty in a department with strong MS programs in hydrogeology, environmental geology, and applied geophysics (63 grad students - 47 hydrogeology). They will teach and develop externally funded research in areas that complement departmental strengths in hydrogeochemistry, hydrological modeling, and applied field studies. Opportunities exist for interaction with other administrative units including the Center for Ground Water Management and the Institute for Environment Quality, as well as for participation in the development of a Ph.D. and Environmental Engineering program. Applicants are requested to send their curriculum vitae, transcripts, a statement of research and teaching interests, and the names and addresses of three references to Dr. Robert W. Ritzi, Dept. of Geological Sciences, Wright State University, Dayton, OH 45435, (513) 873-3455. Review of applications will begin October 1, 1994 and continue until the position is filled. Wright State University is an equal opportunity/affirmative action employer.

SWMM News and Notes A Quarterly Stormwater Management Publication

Of interest to stormwater management modellers, SWMM News and Notes is a quarterly newsletter covering stormwater management modelling, computing, meetings and publications for researcher, consultants and agency engineers. SWMM News and Notes features articles concerning recent developments and research in the stormwater field, as well as reviews of new products, dissertations and books. SWMM News and Notes also provides the latest information for INTERNET users and promotes an international forum for communication between stormwater engineers. For more information contact Dr. William James Computational Hydraulics International, Guelph, ON N1E 4S5, CANADA; Phone: (519) 767-0197 or Fax: (519) 767-2770.

Chemical Kinetics and Process Dynamics in Aquatic Systems Lewis Publishers

This text is a comprehensive work, covering important topics including rate expressions for chemical reactions, theoretical aspects of kinetics and effects of physical conditions on reaction rates, kinetics of chemical reactions in aquatic systems, reactors, mass transport, and process models, kinetics of biochemical reactions and microbial processes in natural waters, prediction methods for reaction rates and compound reactivity, and photochemical reactions in natural waters. Numerous examples are included, and each chapter has a detailed bibliography and problem set. This is available for \$85.00 from Lewis Publishers, 2000 Corporate Boulevard, NW, Boca Raton, FL 33431, or telephone (800) 272-7737 within the continental US or (407) 994-0555 outside the continental US.

Risk Assessment Review

Risk Assessment Review, a bimonthly publication that is a cooperative effort between the office of research and development and the Regional Risk Assessment Network, US EPA can be obtained by writing to CERI Distribution, 26 W. Martin Luther King Drive, Cincinnati, OH 45268. The *Review* serves as a focal point for information exchange among the EPA risk assessment community on both technical and policy issues related to risk assessment.

Universities Water Information Network

The Universities Water Information Network (UWIN) was established under the auspices of the United States Geological Survey (USGS) and the Universities Council on Water Resources (UCOWR). UWIN's main objective is to provide a forum for the dissemination of information in the water resources community. UWIN is set up as an information gopher server on the Internet. Gopher is a menu driven system that is very user friendly. There are several ways that you can access UWIN from your computer:

Over the Internet

A) With a gopher client. If you have access to the Internet and you have gopher client software on your computer, just type the following at the prompt: gopher gopher.c-wr.siu.edu (regular version) or xgopher gopher.c-wr.siu.edu (xwindows version).

B) By telnet. If you have a computer with Internet access but have no gopher client software currently, you can telnet to UWIN by typing the following at the prompt: telnet gopher.c-wr.siu.edu

Once you have connected, log in as guest and use uwin as a password. Now that you are in the system, you can find information describing how to obtain a gopher client of your own by reading the menus.

By Modem

If you have a modem and communications software, you can dial-up UWIN at (618) 453-3324. You need to set up your communication parameters to 8 data bits, 1 stop bit, and no parity (*N1) before dialing. For best results, set your communications software to emulate a vt100, ANSI, or compatible terminal. At the prompt, you log in as guest and use uwin as the password.

Any questions, comments or suggestions that you have to improve the network are very welcome. Contact: Faye Anderson, UWIN, c/o UCOWR Headquarters, 4543 Faer Hall, Southern Illinois University at Carbondale, Carbondale, IL 62901, fax (618) 453-2671, or email faye@uwin.c-wr.siu.edu

EWPCA International Conference

“Integrated Wastewater Management - Collection, Treatment and Reuse”

October 10-12, 1994

Lisbon, Portugal

The EWPCA, a Pan-European organization that represents 22 national associations and around 45,000 professionals in the field of water pollution control (collection, treatment, receiving waters management and reuse), is devoted to promoting and developing the advancement of the science and practice related to water pollution control. EWPCA is organizing this conference with the objectives to present and discuss the most relevant aspects of water pollution control technologies from an integrated point of view. Last year leading experts from all over the world were invited by the EWPCA Secretariat for Tecomex 93 in Monterrey (Mexico), which had to be postponed. EWPCA is now proud to perform this conference in Lisbon.

The conference will be held at the Conference Center (Manual Rocha Building) of the National Laboratory of Civil Engineering (LNEC), in Av. do Brasil 101 in Lisbon, Portugal.

For further information please contact: Mrs. Helena Marecos do Monte/Mr. António Albuquerque, Núcleo de Hidráulica Sanitária, Departamento de Hidráulica, Laboratório Nacional de Engenharia Civil, Av. Brasil 101, 1799 Lisboa Codex, PORTUGAL, telephone 351-1-8482131 (ext. 2617), fax 351-1-8478614, or email nhs_aa@cygnus.lnec.pt

Mrs. Teresa Fonseca, CDIT Laboratório Nacional de Engenharia Civil, Av. do Brasil 101, 1799 Lisboa Codex, PORTUGAL, telephone 351-1-8482131 (ext. 2483 or 2729), or fax 351-1-8474759

Dr. Ing. Sigurd van Riesen, General Secretary of EWPCA, Postfach 1165, D 53758 Hennef, GERMANY, or fax 49-2242-872 135

Water Environment Federation

“Use of Fermentation to Enhance Biological Nutrient Removal”

October 15, 1994

Chicago, Illinois

What is fermentation? Will fermentation products enhance biological nutrient removal (BNR) at a facility? And, if fermentation products will benefit a facility, how can they be produced? To properly answer these questions, the fundamental principles of fermentation must be understood. At this seminar, the basic biological mechanisms which are utilized in fermentation will be presented. In addition, information on fermentation kinetics, reactions, product formation, and

parameters which influence these items will be used to develop a common base of knowledge among seminar participants. The role of fermentation products in enhancing BNR also will be discussed as well as details of pilot and full scale fermenter operation. For more information on this leading-edge technology seminar, please contact: Christine McKallip, Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314-1994, telephone (703) 684-2400, or fax (703) 684-2492.

International Water Supply Association International Specialist Conference

“Desalination and Water Reuse”

December 1-2, 1994

Murdoch University

Perth, Western Australia

The increased importance of desalination and water reuse has been recognized in many parts of the world particularly in arid and semi-arid regions. Modern industries and manufacturing processes along with changing lifestyles and increasing populations are demanding every larger quantities of water. Water and Wastewater Authorities are faced with the problem of finding new resources from processes such as desalination to produce water, and conservation methods such as rain water harvesting and wastewater reuse. The community has also increasingly demanded wastewater reuse rather than disposal.

The major focus of the Conference would be the technologies which can produce water to meet the ever increasing demand for drinking industrial and agricultural uses. The main objective of the Conference is to bring together researchers and professionals to discuss new developments and to exchange experiences in the fields of desalination technologies, wastewater reuse processes and relevant case studies.

The conference topics will include the following subjects:

1. Solar Distillation
2. Reverse Osmosis
3. Electro Dialysis and Ion Exchange
4. Ultrafiltration and microfiltration
5. Developments in Membrane Technology
6. Ground Water Recharge of Wastewater
7. Reclamation and Reuse of Wastewater
8. Wastewater Reduction and Recycling
9. Case Studies on Wastewater Reuse
10. Strategies and Regulation for Wastewater Reuse.

The conference will be held at Murdoch University, Western

Australia. Murdoch University is 15kms southwest of Perth Airport. The conference will last for two days (December 1-2, 1994) and will include two morning and two afternoon sessions. There will be a barbecue dinner and social evening on the 30th November and conference dinner on the evening of the 1st December.

For further information please contact: Dr. K. Mathew, Remote Area Developments Group Institute for Environmental Science, Murdoch University, Murdoch, WA 6150, AUSTRALIA

**AWRA 1995 American Water
Resources Association
31st Annual Conference
November 5-9, 1995**

Houston, Texas

Call for Paper and Meeting Announcement

The deadline for submission of abstracts is November 15, 1994. Three (3) copies of the abstract should be submitted to the appropriate Conference or Symposium Technical Program Chairperson. It cannot exceed 200 words and must include the title of the paper(s), all authors' names, and their affiliations, the FULL MAILING ADDRESS (including position, student status (if any), firm or institution, department, city, state, zip code+4, and country (if not USA), and a daytime telephone number for EACH author. Acceptance notification will be made by February 1, 1995. All attendees, including authors', will be expected to pay the registration fees for the conference.

The Organizing Committee is soliciting suggestions and nominations from institutions, agencies, businesses, firms, and individuals who have an interest in co-sponsoring the 31st Annual Conference or one of the Symposia, contributing financial and other resources to the success of the meetings, or providing an educational or commercial exhibit. Proceedings may be purchased for a government agency or organization. All suggestions, nominations, and any other comments, questions, or ideas should be submitted PROMPTLY to: Alan Potok, Chairperson - Financial Committee, Turner Collie & Branden Inc., 5757 Woodway, Houston, TX 77057.

**2nd IAWQ Specialized
Conference
"Hazard Assessment and Control of
Environmental Contaminants in Water"
June 29-30, 1995
Copenhagen, Denmark**

This conference sponsored by the International Association on Water Quality (IAWQ) will focus on wastewaters (industrial and domestic) and leachates as the pollution sources and on surface waters (including sediments) as the receiving environment

being impacted or considered restored. For further information contact: Dr. Viels Nyholm, Institute of Environmental Science and Engineering, Technical University of Denmark, Bldg. 224, DK-2800 Lyngby, Denmark; fax +45 45886307. The ultimate deadline for abstracts is March 1, 1995, but abstracts will be referred and considered for oral or poster presentation shortly after receipt. For brochure only, contact R. Conway (USA) (304) 747-4016 or fax (304) 747-5430.

**Second International
Symposium on Wastewater
Reclamation and Reuse
International Association on Water
Quality
October 17-20, 1995
Crete, Greece**

The Second International Symposium on Wastewater Reclamation and Reuse will take place on the north shore of the island of Crete, on the outskirts of Iraklio City, Greece in October of 1995. The deadline for submission of abstracts is October of 1994 and the deadline for submission of full papers is February of 1995. Abstracts and full papers must be submitted in standard IAWQ format. Papers on all aspects of advanced treatment and reclamation, recycling and reuse of marginal waters are encouraged. Abstracts and invited speakers will be selected by the Symposium Program Committee. Full papers will be reviewed by the Program Committee in cooperation with the Scientific Committee of the Symposium. The final selection of the papers to be presented will be based on the full papers. However, papers accepted for presentation at the Symposium have to fulfill the IAWQ standards. Papers must be written in English, but may be orally presented in Greek. Simultaneous translation into English will be provided. Selected papers from the Symposium will be published in the IAWQ's Water Science and Technology Series. Abstracts of oral and poster presentations and the invited state-of-the-art papers will be pre-published and distributed at the Symposium.

An exhibition of the latest information and equipment/instruments that companies and organizations have to offer in the advanced wastewater treatment and reuse of marginal waters fields and related disciplines will be organized. The variety of exhibitors includes constructing companies, instrument manufacturers, book publishers, scientific societies, and programs sponsored by government agencies and international organizations.

For more information regarding the Symposium, please contact: Ms. T. Furnaraki, Municipal Enterprise for Water Supply and Sewerage of Iraklio, P.O. Box 1871, 71110, Iraklio, GREECE; Tel: +30-81-229913, 225833; Fax: +30-81-229991; or Ms. R. Kasmirli or Ms. S. Tufexi, National Foundation for Agricultural Research, Institute for Agricultural Research of Iraklio, P.O. 1841, 71110, Iraklio, GREECE; Tel: +30-81-245851, 245873; Fax: +30-81-245858.

Other Conferences...

November 6-11, 1994 Chicago, Illinois, American Water Resources Association 30th Annual Conference and Symposia - "National Symposium on Water Quality," "Symposium on National Water Quality Assessment (NAWQA)," and "Symposium on the Future Quality of the Great Lakes" - General Chairperson: Phillip E. Greeson, U.S. Geological Survey, WRD, SE Region, Spalding Woods Office Park, 3850 Holcomb Bridge Road., Suite 160, Norcross, GA 30092, (404) 409-7700.

February 23-26, 1995 New Orleans, Louisiana, Environmental Geotechnics: "The Geoenvironment - 2000." Contact: ASCE, Speciality Conference Department, 345 E. 47th Street, New York, NY 10017-2398; tel. 800/548-2723.

April 23-26, 1995 Salt Lake City, Utah, AWRA Annual Spring Symposium - "Water Conservation in the 21st Century" - General Chairperson: J. Paul Riley, Utah State Univ., Logan, UT 84322-4110, (801) 750-2783.

June 8-11, 1995 Denver, Colorado, ASCE Civil Engineering Education Conference. For information contact: Jim Yao, Texas A&M University, College Station, TX 77843; (409) 845-1958 or fax (409) 845-6554.

June 25-28, 1995 Honolulu, Hawaii, AWRA Annual Summer Symposium - "Water Resources, Environmental Hazards: Emphasis on Hydrologic and Cultural Insight to the Pacific Rim" (An International Symposium) - General Chairperson: William Back, U.S. Geological Survey, Reston, VA 22092, (703) 648-5856.



REMINDER

Deadline for the January 1995
AEEP Newsletter
is Friday, December 2nd.

AEEP Luncheon Registration Form

**Monday, October 17, 1994 at noon
Grand Ballroom F & G
Chicago Downtown Marriott Hotel
Chicago, Illinois**

Please reserve a place for me at the AEEP Luncheon. My check payable to AEEP in the amount of \$25.00 per person is enclosed.

Name: _____

Address: _____

Please check here and notify your server at the luncheon if you prefer a vegetarian dish for the main course.

Do you require that a receipt be mailed to you? yes no

Send the completed registration form and check to:

**Steve Randtke
Civil Engineering Department
University of Kansas
Lawrence, KS 66045
Phone (913) 864-3731 / Fax (913) 864-3199**

ENVIRONMENTAL TRANSPORT PROCESSES (CE 574)

Professor: Bruce Logan

University of Arizona

This course covers the fundamentals of mass transport of chemicals between air, water, soil, and biota. Material is divided into three subject areas: mass transfer theory, transport processes related to engineered reactors, and transport in the natural environment. The focus of the course is on chemical calculations particular to dilute systems, with emphasis on quantification of chemical transport rates and distributions in natural and engineered environments. Special topics of interest to Environmental Engineers include biofilm models, bioreactors, chemical partitioning in thin-fluid film bioreactors, and fate of anthropogenic chemicals from spills and discharges into the environment (rivers, lakes, and groundwaters). [3 credits]

TEXT None Available. Course notes adapted from "Chemodynamics" (Thibodeaux 1979), standard mass transfer books (Welty, Wicks and Wilson 1984, Bird Stewart and Lightfoot 1960), environmental engineering texts, and the published literature.

WEEK	TOPIC
1	Introduction; importance of multiphase transport processes; review of ppm, ppb; concentration conversions; examples of multiphase transport catastrophes in the environment, notation for multiphase systems.
2-3	Introduction to chemodynamics; equilibrium vs. steady state; thermodynamic calculations of Gibbs Free Energy; chemical potential, activity, fugacity; air-liquid partitioning; calculations for dilute environmental systems.
4	Steady state mass balances and control volumes; Fick's laws of diffusion; calculation of gas and liquid diffusivities; molecular weight separations.
5	Vector notation; derivation of the general mass transport equation and more familiar simplified forms.
6	Differential mass transport equation derivations; rate of diffusion through a stagnant gas film; absorption with homogeneous reaction.
7	Effects of reaction on mass flux; diffusion in a pipe. Introduction to mass transport coefficients; interphase mass transfer; gas transfer; multiple resistances in aeration of bioreactors.
8	Mass transfer to individual spheres and bubbles, and swarms of bubbles; mass transfer coefficients for bioreactors and lagoons; determination of aeration mass transfer coefficients. Mass transfer to aggregates; effectiveness factors and relative uptake factors; models of mass transfer to microorganisms.
9	Shear in bioreactors; example mass transfer calculations. Penetration theory and wetted wall reactors such as air strippers and trickling filters.
10	Shear in bioreactors; example mass transfer calculations. Penetration theory and wetted wall reactors such as air strippers and trickling filters.
11	Stagnant film theory; boundary layer theory. Examples in critically reading the mass transfer (and other) technical literature.
12	Mathematical simulation of biofilm processes; analysis of a published paper with reference to textbook models.
13	Groundwater transport equations used in models; contaminant transport in the subsurface.
14	Derivation and interpretation of retardation coefficients. Non-aqueous phase liquids (NAPLs) in groundwaters.
15-16	Contaminant transport in lakes, rivers and oceans; multiphase transport in rivers (globs, blobs and pools); oil spills; air-land mass transfer.

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