

ASLO BULLETIN

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Remember to Vote! Candidate Bio.s start on p. 6

MESSAGE FROM THE PRESIDENT

REFLECTIONS ON MY TENURE

Nancy H. Marcus, Department of Oceanography, Florida State University, Tallahassee, FL 32306 (Tel: 904-644-5498; Fax: 904-644-2581; Internet: marcus@ocean.fsu.edu)

This is my last message to you as President of ASLO. As I reflect back over the last two years and especially the last year my mind focuses on the many changes that are going on around us. During the last year I have participated in several workshops, conferences, discussion groups etc. and the message has been universal. At the risk of sounding like I am standing on a soap-box I offer the following thoughts.

We must get out of our ivory towers and extend the circle of people we interact with. The ASLO annual meeting has traditionally been a venue for researchers to present their work to other researchers. This should continue, but it is evident that we must expand our goals. At last year's meeting in Reno we offered a session on "Alternative Careers" that was organized by Cheryl Dybas of the National Science Foundation. It was one of the most well attended sessions at the meeting. A similar session at the AGU/ASLO Ocean

Science meeting in San Diego this past week drew a correspondingly large crowd. I concur with those who have suggested that we should simply title the session "Careers in the Aquatic Sciences". It is time to move away from the notion that the academic career path is the ideal and everything else is an alternative!

Last September I attended a workshop held at Hampton University the aim of which was to develop useful strategies for enhancing the participation of under-represented groups in ocean sciences (see p. 5). For several years ASLO has hosted the CURMLO program organized by Ben Cuker and supported by the National Science Foundation. The program brings minority students from all across the country to the summer ASLO meeting. There they are matched with a meeting mentor to help guide them through the meeting. In addition they present the results of their own work and initiate contacts with other students and with faculty/scientists with whom they might work and study in the future. The Historically Minority Colleges and Universities represent a

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TARGET DATES for 1996 submissions: February 12, July 8, & October 14

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valuable resource for the recruitment of under-represented groups into the aquatic sciences. To be effective we need to establish good working relationships with faculty from these institutions, which in turn will have a trickle-down effect on students. A report of the Hampton University workshop will be published soon. For more information contact Ambrose Jearld at the National Marine Fisheries Laboratory in Woods Hole, MA (ajearld@whsun1.who.edu).

The National Association of Marine Laboratories held a workshop in October, 1995 to discuss the roles of marine laboratories in facilitating research, education, and monitoring in the coastal zone. An initial report is available from Tom Malone at the Horn Point Environmental Laboratory (malone@hpel.umd.edu) and a complete report will be published this spring in the *Biological Bulletin*. Many ASLO members are affiliated with a NAML lab, and even those not affiliated would benefit from reading the report. An overarching theme of the various discussion groups was the need for better communication among ourselves as well as with others i.e. federal, local, and state governments, industry, management and regulatory agencies, and the general public. All of us must contribute to these efforts if not personally with our own time then financially by supporting the work of societies and organizations that choose to engage in such activities. The communication of information is a powerful message, but right now the only audience that we communicate with is ourselves and even here we could be more effective. We need to not only expand our audience,

but we must tailor our message so that it is understandable to a diversity of audiences.

In December 1995 I attended an NSF-sponsored conference in Washington D.C. celebrating the achievements of women in science. While celebration was clearly in order it was also obvious that some subtle barriers still hinder the advancement of women in science. Because many of us still work in an environment where we are still noticeably in the minority it was an energizing experience to sit in an auditorium of more than 600 scientists most of whom were women. While overt discrimination is mostly a thing of the past it is clear that having effective role models is a vital aspect of one's career development. The conference showed that many women faculty still experience isolation in their own departments and institutions because they have few women colleagues. Moreover women graduate students have few role models at their own institutions. Attendance at ASLO meetings is clearly an important networking opportunity for all new people to the field, but it is especially important for women because of the presence of more role models. I therefore urge ASLO and other societies to consider strategies e.g. luncheons, receptions, panel discussions to facilitate the interaction of women faculty/researchers with women students at their meetings.

I have enjoyed my two years as ASLO President and want to take this opportunity to thank the other ASLO officers, members-at-large, and committee members for their cooperation and insights during this time. I also want to thank the ASLO staff for their help in translating our ideas into reality.

MESSAGE FROM THE PRESIDENT-ELECT

FUTURE DIRECTIONS FOR ASLO

Diane M. McKnight, ASLO President-Elect, USGS-WRD, 3215 Marine St., Boulder, CO 80303 (Tel: 303-541-3-15; Fax: 303-447-2505; dmmcknig@usgs.gov)

During the next year, the ASLO Board of Directors will be considering future directions for improving service to the membership, maintaining the quality of the journal, and promoting the disciplines of the limnology and oceanography. The ASLO Board has decided to establish a committee to assess the status of present society activities and to recommend to the Board changes for the future. The committee will meet and provide a report to the ASLO Board for their consideration.

A past committee, the Future of ASLO committee, had the same charge and met in Monterey, California in 1988. The report provided to the ASLO Board in 1989, "The Future of ASLO: Report and Recommendations," has proven to be a useful document in the subsequent deliberations of the ASLO Board. For example, the ASLO Board decided to implement several of the recommendations discussed in the report, such as publication of the *ASLO Bulletin* and alternating a winter meeting with an ocean emphasis and a meeting with a broad aquatic sciences emphasis.

It is timely to form a new committee for several reasons. Firstly, changes in the activities of ASLO have been made

since 1988 and a reassessment of the status of the Society is warranted. For example, ASLO has increased its interactions with other scientific societies and has held two symposia on important marine and freshwater issues (specifically renewal of the biannual AGU/ASLO Ocean Sciences meeting, the 1991 symposium on What Controls Phytoplankton Production in Nutrient-Rich Areas of the Open Sea, and the 1994 symposium on the Regional Assessment of Freshwater Ecosystems and Climate Change in North America which was co-sponsored by ASLO and the North American Benthological Society.) Secondly, several changes are on the horizon for the operation of the journal, such as the retirement of Raelyn Cole as managing editor and the possibility of electronic publishing. Finally, the membership of the society has continued to raise important issues for the future of the society.

One area of increasing membership interest is in enhancement of education in limnology and oceanography at all levels (k-12, and in higher education); another area is in the participation of ASLO in activities to provide timely information on marine and freshwater issues. The ASLO Board welcomes comments from ASLO members with regards to current ASLO activities and services, as well as ideas and suggestions for future directions. Please send comments to me at the address and e-mail above.

ASLO NEWS

ASLO INVITES SUGGESTIONS FOR OVERSEAS CO-SPONSORED MEETINGS

Erica Head, ASLO Member-at-Large and International Committee Chair, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, NS B2Y 4 A2, Canada (Tel: 902-426-2317; Fax: 902-426-9388; Erica.Head@maritimes.dfo.ca)

Amongst the items discussed at the ASLO Board meeting held in San Diego on Sunday Feb. 11 was an interim report of the International Committee. One of the recommendations of the report, which was endorsed by the Board, was that we should try to hold more co-sponsored meetings in overseas locations. One example of such a meeting was given in my previous *Bulletin* article (4(4), Autumn, 1995).

Overseas meetings might be smaller than the regular ASLO meetings, depending on the co-sponsor, and they might focus on selected topics or take the form of workshops. In order to have such events occur, however, we have to get input from members interested in seeing them happen. ASLO is prepared to do more than just lend its name to such functions, so if you put forward a suggestion you will not necessarily be left to do everything on your own. If you have an idea for a meeting such as I have described, then please contact me, Jon Cole (Meetings Committee Chair) or Sue Weiler (Executive Director).

WORKSHOP REPORT, MERGER OF UNITED STATES GEOLOGICAL SURVEY (USGS) AND NATIONAL BIOLOGICAL SERVICE (NBS)

Diane M. McKnight, ASLO President-Elect, USGS-WRD, 3215 Marine St., Boulder, CO 80303 (Tel: 303-541-3-15; Fax: 303-447-2505; dmmcknig@usgs.gov)

On February 22 and 23, Alan P. Covich (president of the North American Benthological Society) and I (representing ASLO) participated in the "Interactive Workshop of Scientific and Professional Societies to Discuss the Pending Merger of the National Biological Service into the U.S. Geological Survey." The American Geological Institute (AGI), which represents an array of scientific societies with an interest in geological sciences, was encouraged by the Office of Science and Technology Policy of the White House to convene a workshop where representatives of scientific societies would provide guidance to the Department of Interior and Congress. The societies participating the workshop are listed in Table 1.

At the beginning of the workshop, Secretary of the Interior Bruce Babbitt discussed his concept for the NBS as a scientific agency with a mission comparable to that of the USGS — to provide unbiased scientific knowledge on the biological resources of the nation. He commented that in government, opportunity can arise from crisis, and that the merger of USGS and NBS represents an opportunity to achieve now what would have become desirable through an evolutionary process.

Following Babbitt's remarks, presentations describing the two agencies were given by NBS Director Ronald Pulliam and USGS Director Gordon Eaton. The USGS's National

Table I. Societies participating in the Interactive Workshop of Scientific and Professional Societies to Discuss the Pending Merger of the National Biological Service into the U.S. Geological Survey.

American Geological Institute (host)
American Assn. for the Advancement of Science
American Assn. of Petroleum Geologists
American Congress on Surveying and Mapping
American Geophysical Union
American Institute of Biological Sciences
American Institute of Professional Geologists
American Society of Limnology and Oceanography
American Society for Photogrammetry and Remote Sensing
Assn. of American State Geologists
American Institute of Hydrology
Ecological Society of America
Geological Society of America
International Assn. of Hydrogeology/US Section
North American Benthological Society
Society for Conservation Biology
Society of Environmental Toxicology & Chemistry
Soil Science Society of America
The Wildlife Society

Water Quality (NAWQA) Program was mentioned frequently as a program where collaborative interactions between USGS and NBS scientists are highly successful.

The overviews were followed with presentations by division chiefs from USGS and NABS. In his presentation, Robert Hirsch, Chief Hydrologist of the Water Resources Division (WRD) of the USGS, used articles from past issues of the WRD Ecology Newsletter and the NAWQA protocols for biological sampling to illustrate ecological programs in the Water Resources Division.

On the second day of the workshop the participants met in small discussion groups, and then reconvened as the full group to discuss ideas and recommendations. As representatives of two aquatic sciences societies, Alan Covich and I described scientific issues related to the two agencies. We referred to the research agenda presented in the book entitled *The Freshwater Imperative: A Research Agenda*, which was endorsed by NABS and ASLO, and to the critical problems of hazardous algal blooms in coastal waters.

The general consensus supported the merger as a significant opportunity and the separation of the scientific mission from regulatory activities. AGI will prepare a short report discussing opportunities in more detail and presenting recommendations made by the discussion groups. The Ecological Society of America and the Geological Society of America are planning to hold regional workshops on the planned merger.

For details and copies of the report, contact the American Geological Institute, 4220 King St., Alexandria, VA 22302-1502 (Tel: 703-379-2480; Fax: 703-379-7563).

REMEMBER TO VOTE!!

ASLO FORUM

GROUND-BREAKING CONFERENCE ON DIVERSITY IN THE MARINE SCIENCE COMMUNITY

The waterfront campus of Hampton University in Virginia was the site of a two-day conference, "Expanding Opportunities in Ocean Sciences," held on September 11 and 12, 1995. This was an unprecedented attempt to bring together a range of decision-makers who could directly influence the success of minority students in completing graduate study at large marine science institutions.

More than 100 people attended, representing faculty, staff, and students from historically minority serving colleges and universities (HMSCUs) and blue-water graduate schools, and the leadership of private marine labs, federal marine science agencies, and leading non-government organizations with interests in marine science. Nancy Foster, Deputy Administrator of the National Marine Fisheries Service (NMFS) and Kathryn Sullivan, NOAA's Chief Scientist, attended along with ASLO President Nancy H. Marcus.

Ambrose Jearld of the National Marine Fisheries Service (NMFS) in Woods Hole, Mass. began to organize the conference early in 1995, following up on discussions about preparing for diversity in marine science that occurred at last year's NOAA-University Partnership conference. The rationale, Jearld explained, is that "There is a good crop of minority students out there ready to pursue graduate training in the ocean sciences, and the big ocean schools want more diversity. We needed some way to get the two together."

The NMFS Equal Employment Opportunity Office, directed by Natalie Huff, was the prime sponsor for the event. ASLO, The Oceanography Society (TOS), the Southern Association of Marine Laboratories, and the National Association of State Universities and Land Grant Colleges co-sponsored the event.

A 15-member steering committee composed of top administrators and educators from academia and agencies was organized by Jearld. This committee developed the conference program and the list of invited participants, and assisted in obtaining the co-sponsorships.

Welcoming speakers included Hampton President William Harvey and Nancy Foster, Deputy Administrator of NMFS. In her remarks, Foster emphasized the importance of capitalizing on personal contacts made at the meeting, "It's absolutely true that nothing in the world is more effective in making a change in the way we do business than the personal commitment of people who are in positions to make decisions about the way we do business...I hope that when we leave this conference, we'll be able to look back over the next few months and say that this was one of the rare meetings that actually made a difference."

The meeting began with three discussions led by panels comprising top administrators, faculty, and minority graduate candidates in marine science degree programs. This was followed by topic-oriented workgroups on recruiting stu-

dents, retaining students, using faculty-student relationships to improve students success, the role of faculty-to-faculty interactions between HMSCUs and graduate schools, and bridging programs.

Recommendations, conclusions and specific actions for implementation from the conference are being compiled by Jearld and should be available soon from his office: NEFSC/NMFS, 166 Water St., Woods Hole, MA 02543 (Tel: 508-548-5123; ajeardl@whsun1.wh.who.edu).

WORKSHOP REPORT, "ENHANCING THE ECOLOGICAL BASIS OF CONSERVATION"

A new paradigm—recognizing flux and heterogeneity as essential components of ecosystems—is having significant impact on ecological research and the management of natural areas. The Cary Conference VI, "Enhancing the Ecological Basis of Conservation: Heterogeneity, Ecosystem Function and Biodiversity" was convened May 9-11, 1995 by Steward Pickett, Richard Ostfeld, Moshe Shacrak and Gene Likens to address this topic.

Pickett noted "Ecology's former working model was the idea that ecological systems — for example, a lake or a forest patch — were fixed, unchanging landscapes.... The New Ecology seeks to identify the dynamic processes in natural systems.

"The New Ecology also explores "patchiness" as a central feature determining the composition of an ecosystem. "This New Ecology model, emphasizing the key role of diverse complex landscapes in giving species opportunities, explains why conservation efforts devoted to single species, one at a time, turn out to be insufficient to save species on the brink of extinction," said Richard Ostfeld. Conversely, the loss of particular species can have large, but still largely unknown, effects on whole ecosystems.

Since ecologists cannot predict how many or which species can be lost without significantly altering an ecosystem, the ecosystem approach offers an effective way to conserve poorly known species and habitats. "This new model makes clear that effective ecosystem conservation entails preserving or actively promoting dynamic, changing, and variable ecological processes, which are more inclusive than individual species or even an approach focusing on fixed habitats," explained Richard Ostfeld.

Presentations and discussion from the workshop are scheduled for publication in Summer, 1996 by Chapman & Hall. For more information, contact Ann Botshon (Tel: 914-677-7573; Fax: 914-677-5976).

Your Vote Counts!

Last year only 14% of the ASLO membership voted--
Please help us do better this year!
Candidate Bio.'s begin on p. 9.

BIOGRAPHICAL SKETCHES, 1995 ASLO CANDIDATES

ASLO is governed by a Board of Directors consisting of four elected officers and seven Members-at-Large, one for every 500 members of the Society.

This year we will elect: a President-Elect to succeed Diane M. McKnight, who becomes President on July 1; a Treasurer to replace John S. Stockner who completes his 12th and final year of service this year; and two Members-at-Large to succeed Erica J.H. Head and Robert H. Peters, who complete their 3-year terms in June. Continuing Members-at-Large are: JoAnn M. Burkholder, Jonathan J. Cole, Sybil P. Seitzinger, Mark E. Hay and Catherine M. Pringle.

We are grateful to all those who submitted nominations. Selecting among the many outstanding individuals who were nominated was difficult and we thank this year's Nominations Committee (John J. Cullen, Chair; Lisa A. Levin, Peter G. Verity and Warwick F. Vincent) for their efforts. Their prime objective was to forward a slate of very well qualified candidates. In addition to excellence in research and community service, the committee considered such things as the present composition of the ASLO executive and the need for broad representation of regions and specialties. We hope that those interested in serving or in nominating a colleague will continue to do so. Next year we will need two candidates for Secretary as Polly A. Penhale completes her final year of service, and 6 candidates for Member-at-Large.

Please vote for your preferred candidates on the enclosed ballot.

Deadline for receipt of ballots: **June 1, 1996**

PRESIDENT ELECT

Paul G. Falkowski *B.Sc. 1972, M.A. 1973 (City College of the City University of New York);
Ph.D. 1975 (University of British Columbia).*



Dr. Falkowski is a Senior Scientist at the Brookhaven National Laboratory and Adjunct Professor at the Marine Sciences Research Center at the State University of New York at Stony Brook.

His research interests include phytoplankton ecology, biophysical processes, biogeochemical cycles, and symbiosis.

He has worked extensively in the Atlantic Ocean and focussed on examining the role of continental margins in the carbon economy of the central ocean basins. He has authored or coauthored over 140 papers in peer-reviewed journals and books, and has co-invented fluorosensing systems which are capable of measuring phytoplankton photosynthetic rates nondestructively and in real time. He is currently finishing writing a book on Aquatic Photosynthesis with John Raven.

Dr. Falkowski organized two Brookhaven Symposia, one in 1980, on Primary Productivity in the Sea, and one in 1991, on Primary Productivity and Biogeochemical Cycles in the Sea. He chaired the first Gordon Conference on Microalgal Products. He has served on the international advisory board of the Alternative Fluorocarbon Environmental Assessment Study, which is charged with determining the effects of alternative hydrofluorocarbons on global ecological processes, and as advisor to the National Environmental Research Council. He serves as an Associate Editor of *Limnology and Oceanography* and as Subject Editor of *Global Change Biology*. In addition, Falkowski has served

on numerous U.S. and foreign advisory panels, and has chaired workshops to address the integration of molecular biological processes in ecosystems research. In 1992 he received a John Simon Guggenheim Fellowship.

Representative publications

- Falkowski, P. G., Y.-S. Kim, Z. Kolber, C. Wilson, C. Wirick and R. Cess. 1992. Distinguishing between anthropogenic and natural factors affecting low-level cloud albedo over the North Atlantic Ocean. *Science* 256:1311-1313.
- Falkowski, P. G. and C. Wilson. 1992. Phytoplankton productivity in the North Pacific in relation to the absorption of anthropogenic CO₂. *Nature* 358:741-743.
- Kolber, Z. and P. G. Falkowski. 1993. Using active fluorescence to derive phytoplankton photosynthesis in situ. *Limnol. Oceanogr.* 38:1646-1665.
- Falkowski, P. G. 1994. The role of phytoplankton photosynthesis in global biogeochemical cycles. *Photosyn. Res.* 39:235-258.
- Escoubas, J-M, M. Lomas, J. LaRoche and P. G. Falkowski. 1995. Light intensity regulation of cab gene transcription is signaled by the redox state of the plastoquinone pool. *Proc. Nat. Acad. Sci. USA* 92:10237-10241.

Candidate Statement

Over the two decades since I became a member, membership in the society has grown and greatly diversified. The society has not completely met many of the needs of the hard-core oceanographic community, and many members of that community are concurrent or sole members of other societies, especially AGU. On the other hand, many of the community and population ecologists, feel that ASLO is not working well on their behalf, and are more active in Ecological Society of America or its foreign counterparts. While the

major organ of ASLO, *Limnology and Oceanography*, is very well respected, a society is more than a journal and a meeting. Where to go from here? I believe that it probably would be to the benefit of the members of ASLO to engage in a dialogue concerning the role aquatic sciences in society at large, and, in a more restricted sense, in relation to the rest of the scientific community. How do aquatic sciences affect the population at large? Does aquatic science affect or stimulate other branches of science? Within our own profession, we must ask why are those among us working on biogeochemical cycles so often tuned out to evolutionary and population biology and vice versa. How are these subjects taught at undergraduate and graduate levels? Can ASLO help, with its members, develop curricula and materials that

would facilitate greater interdisciplinary awareness and respect? Can we lend our voice more loudly to the larger ecological and environmental discussion related to the destruction of habitat and loss of natural resources? Can we provide information on career opportunities and requirements to prospective students? Can we provide on-line job listings, course listings, and listings of field training opportunities? I would use the position of President of ASLO, not only to advocate oceanography and limnology, but also to examine our responsibilities to educate as opposed to merely train students, and to initiate a dialogue within the scientific community that helps convey the goals and roles of limnologists and oceanographers to the society of the world at large.

PRESIDENT-ELECT

Thomas C. Malone *B.A. 1965 (Colorado College); M.Sc. 1967 (University of Hawaii)
Ph.D. 1971 (Stanford University)*



Dr. Malone began his professional career as an Assistant Professor in the Biology Department of The City College of New York in 1971. Upon receiving tenure and a promotion to the rank of Associate Professor, he moved on to the position of Senior Research Associate at the Lamont-Doherty Geological

Observatory of Columbia University. From Lamont, Dr. Malone moved on to Brookhaven National Laboratory and, in 1982, to the University of Maryland Center for Environmental and Estuarine Studies, Horn Point Environmental Laboratory (HPEL). Professor Malone is currently the Director of HPEL and of the Multiscale Experimental Ecosystem Research Center.

His research on plankton dynamics has emphasized size-dependent responses of phytoplankton to physical and chemical forcings in estuarine, coastal and open-ocean systems. Current interests are shifting to the challenges of developing constructive interactions between environmental science and the processes of environmental governance.

In addition to reviewing a plethora of manuscripts and proposals submitted to a wide variety of journals and agencies, Dr. Malone has served as an associate editor for *Estuaries* and editor of *UNOLS News*. He has represented the scientific community as a member of the UNOLS Advisory Council (Vice Chair), the subcommittee on Coastal Oceanography of the Fleet Improvement Committee, the Advisory Committee to NSF Ocean Sciences (executive board), the NOAA Coastal Ocean Program Science Advisory Committee, the National Research Council Committee on Science and Technology in Transition, the National Academy of Science's U.S. Delegation to Croatia and Slovenia, the Intergovernmental Task Force on Water Quality, the CORE

Steering Committee for Ocean Science & Technology & National Security, and the executive committee of the Southern Association of Marine Laboratories (SAML). As chair of the National Association of Marine Laboratories' (NAML) steering committee, Dr. Malone organized the recent workshop on the "roles of coastal laboratories in the implementation of the nation's emerging priorities for research and monitoring in the coastal zone."

Representative Publications

- Malone, T.C. 1980. Algal size and phytoplankton ecology. Pp. 433-464 in I. Morris (ed.), *The Physiological Ecology of Phytoplankton*, Blackwell, London.
- Malone, T.C., W.M. Kemp, H.W. Ducklow, W.R. Boynton, J.H. Tuttle and R.B. Jonas. 1986. Lateral variation in the production and fate of phytoplankton in a partially stratified estuary. *Mar. Ecol. Prog. Ser.* 32:149-160.
- Malone, T.C. and H.W. Ducklow. 1990. Microbial biomass in the coastal plume of the Chesapeake Bay: phytoplankton-bacterioplankton relationships. *Limnol. Oceanogr.* 35:296-312.
- Malone, T.C., W. Boynton, T. Horton and C. Stevenson. 1993. Nutrient loadings to surface waters: Chesapeake Bay case study. Pp. 8-38 in M.F. Uman and C. O'Melia (eds.), *Keeping Pace with Science and Engineering: Case Studies in Environmental Regulation*, National Academy Press.
- Malone, T.C., D.J. Conley and S. Pike. 1993. Transient variations in phytoplankton productivity at the JGOFS Bermuda time series station. *Deep-Sea Res.* 40:903-924.

Candidate Statement

The nature and scope of activities that the community of aquatic scientists is engaged in are changing and expanding as new technologies make possible rapid data collection and dissemination; as the complexities of environmental problems are appreciated; as interdisciplinary approaches to these problems are pursued; and as the need to move from descriptive to predictive ecology intensifies. These pressures are compounded by growing demands of the public, elected

officials, and the environmental management community for research that is more relevant and by pressure to be more effective with less funding. Building on its strengths (publication of a high-quality journal, annual meetings, and special symposia), ASLO is responding by highlighting important issues, increasing student participation, attracting individuals from under-represented groups, and promoting the careers of recent Ph.D.s. I strongly endorse these activities and believe that ASLO should play a more active role in promoting (1) stronger linkages between science, policy making, and

management; (2) curricula to train students for alternative careers in the aquatic sciences (fewer clones of ourselves); and (3) approaches to research that facilitate individual creativity and innovation. ASLO, in collaboration with other societies (e.g. ESA, ERF, AGU) and organizations (e.g. NAML, CORE), is poised to meet these challenges by promoting more “bottom-up” approaches to implementing research programs that are relevant to local and regional problems and significant in terms of national priorities.

TREASURER

Russell A. Moll *B.A. 1968 (University of Vermont); M.S. 1971 (Long Island University); M.Sc. 1983 (University of Michigan); Ph.D. 1974 (State University of New York at Stony Brook)*



Dr. Moll is currently the Director of the Cooperative Institute for Limnology and Ecosystems Research (CILER), an Associate Research Scientist in the Center for Great Lakes and Aquatic Sciences, and Associate Research Scientist in the School of Natural Resources and the Environment, all at the University of Michigan. He recently

completed a two-year rotation as the Associate Program Director of the Biological Oceanography Program at the National Science Foundation. Other past positions include the Assistant Director of the Michigan Sea Grant College Program and research positions at Brookhaven National Laboratory.

His research focus has been on the interaction of phytoplankton and bacteria with their physical and chemical environment. Studies have included the response of algae and/or bacteria from influxes of nutrients, impact of the physical environment on phytoplankton, shifts in standing crop and productivity with changes in the physical and chemical aquatic environment, and effects of toxic contaminants on algal and bacterial productivity. Dr. Moll has conducted research in large and small temperate lakes, tropical rivers, and temperate and tropical estuaries.

Dr. Moll has served on numerous steering committees and hosted/co-hosted over a dozen workshops defining research strategies for the Great Lakes region. Recent efforts include hosting workshops to set research priorities for coastal studies in the Great Lakes and climate change in the Great Lakes Basin. Dr. Moll is a member of the Technical Advisory Team for the Great Lakes Protection Fund. He was the co-founder of, and is the University of Michigan's representative to, the Michigan Aquatic Sciences Consortium. While leading a major aquatic research project in West Africa for over one year, Dr. Moll advised a tri-national African River Basin Commission on river basin development plans. Dr. Moll is a member of the Coordinating Council for the Freshwater Imperative.

Representative Publications

- Tarapchak, S.J. and R.A. Moll. 1990. Phosphorus uptake by phytoplankton and bacteria in Lake Michigan. *J. Plankton Res.* 12:743-758.
- Moll, R.A. and P.J. Mansfield. 1991. Response of bacteria and phytoplankton to contaminated sediments. *Hydrobiologia* 219:281-299.
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- Moll, R., T. Johengen, A. Bratkovich, J. Saylor, G. Meadows, L. Meadows and G. Pernie. 1993. Vernal thermal fronts in large lakes: A case study from Lake Michigan. *Verh. Internat. Verein. Limnol.* 25:65-68.
- Moll, R. A., D. J. Jude, R. Rossmann, G. Kantak, J. Barres, S. DeBoe, J. Giesy and M. Tuchman. 1995. Movement and loadings of inorganic contaminants through the lower Saginaw River. *J. Great Lakes Res.* 21:17-34.

Candidate Statement

Limnology and oceanography, similar to many of the sciences, face a very challenging future. While high-quality science published in a very high-quality professional journal will continue as the hallmark of ASLO, recent events suggest that our society must do more if our field of endeavor is to thrive. In a period of shifting government priorities for many nations, societies such as ASLO will be called upon to speak with a collective and cohesive voice. The public at large must be made aware of the contribution that limnological and oceanographic research makes to the overall understanding of the environment. This challenge requires an ASLO Board that is tuned to the needs of both the ASLO members and the public. As the Treasurer of ASLO I would work hard to fill two important roles. First, as a Board member, I would recognize the importance of working together with other Board members to be sure that the needs of the ASLO membership are served in a multitude of ways such as enhancing the voice that our fields of endeavor have in playing a useful role in today's rapidly changing societies. Secondly, as the Treasurer, I would be keenly aware that I am serving as the Chief Financial Officer of ASLO, working to maintain and enhance the economic vitality of the society, and employing sound financial practices that maximize the

impact of our society. As the financial transactions of ASLO grow more complex, I would look for new yet responsible ways to work more efficiently with the many people and groups that have financial involvement with the society. My many years of experience in running a research institute with

budgets that now exceed a million dollars per year will serve as good preparation for the complex job of Chief Financial Officer. I feel qualified for the position, would enjoy your support and look forward to working with you if elected.

TREASURER

Richard D. Robarts *B.Sc. 1968 (University of Victoria, Canada); M.Sc. 1970 (University of Waterloo, Canada); Ph.D. 1974 (Rhodes University, South Africa)*



Dr. Robarts is Chief of the Environmental Sciences Division at the National Hydrology Research Institute, Environment Canada and is an Adjunct Professor in the Department of Applied Microbiology, University of Saskatchewan and the Department of Biological Sciences, University of Alberta. The

Environmental Sciences Division conducts research on physical-chemical and biological components of lakes, wetlands and groundwater systems. He has held positions in Canada and overseas in government research laboratories, universities and in environmental consulting. Dr. Robarts has 10 years experience in managing budgets in excess of a million dollars and has undertaken training in topics such as financial management, marketing and salesmanship, courses pertinent to the role of Treasurer.

His present research interests are mainly on the role of bacteria in biogeochemical cycles in Prairie wetlands and saline lakes, particularly DOC and phosphorus cycles. Other recent projects include carbon and phosphorus cycles in Lake Biwa, Japan and in the Eastern Mediterranean Sea. He spent 14 years working on the microbial ecology of African lakes and reservoirs. Dr. Robarts has worked with the Canadian International Development Agency (CIDA) to develop a water quality monitoring program in Egypt. Currently, with Russian co-authors, he is writing a book on the biogeography of Russian wetlands and the distribution of heavy metals in them.

Dr. Robarts service to ASLO include: Chair, Committee on Membership in Economically Developing Countries; Member, ASLO By-laws Committee; Member, International Committee; student poster judge for 4 years and Chair for 1 year; and Member, Organizing Committee and Session Chair, 1993 ASLO Summer Meeting. He is Chair of the International Committee of the Group for Aquatic Primary Productivity (GAP), a working group of S.I.L. and INTECOL and is a Member of the National Sciences and Engineering Research Council of Canada (NSERC), Ocean and Inland Waters Strategic Grants Panel. Dr. Robarts is an Associate Editor of the *Canadian Journal of Fisheries and Aquatic Sciences*. He is a reviewer for a wide-range of marine and freshwater journals, including *Limnology and Oceanography*.

Representative Publications

- Robarts, R.D. and R.J. Wicks. 1989. [Methyl-3H]thymidine macro-molecular incorporation and lipid labeling: their significance to DNA labeling during aquatic bacterial growth rate measurements. *Limnol. Oceanogr.* 34:213-222.
- Robarts, R.D. and T. Zohary. 1993. Fact or fiction - bacterial growth rates and production as determined by [3H-methyl]thymidine? *Adv. Microb. Ecol.* 13:371-425.
- Snyder, R.A., R.D. Robarts and D.E. Caldwell. 1994. [methyl-3H]Thymidine and [3H]leucine incorporation in *Vibrio* sp. grown in nutrient-limited continuous cultures. *Can. J. Microbiol.* 40:375-381.
- Robarts, R.D., D.B. Donald and M.T. Arts. 1995. Phytoplankton primary production of three temporary northern prairie wetlands. *Can. J. Fish. Aquat. Sci.* 52:897-902.
- Waiser, M.J. and R.D. Robarts. 1995. Microbial nutrient limitation in saline prairie lakes with high sulfate concentrations. *Limnol. Oceanogr.* 40:566-574.

Candidate Statement

Professional societies, such as ASLO, and their members have all felt the impacts from the implementation of the cutbacks and downsizing management strategies being applied by various levels of government, academic institutions and the private sector. In the past, these organizations had a simple remedy for shrinking budgets: increase revenues. In the case of societies such as ASLO, this has resulted in a series of fee increases. From my years of living and working overseas I know that these increases are particularly hard on many of our international members. The next few years for ASLO are going to be exciting and challenging years as the Society examines the way it does its business and ponders the most cost-effective ways that this should be done. I believe that ASLO members should not be asked for additional membership fees until the Society has made a study of its discretionary and non-discretionary costs and can assure members that the Society's business is being done in the most cost-effective manner. In addition, ASLO will have to be pro-active in seeking income from sources other than membership dues. For ASLO to retain its position as a leading organization in the aquatic sciences, it is essential that the Society have a sound economic footing on which to base its activities. With my experience and training in financial planning and budget management I believe I would work effectively with ASLO's Business Manager and Board to achieve this goal.

MEMBER-AT-LARGE

James J. Elser

*B.Sc. 1981 (University of Notre Dame);
M.Sc. 1983 (University of Tennessee, Knoxville);
Ph.D. 1990 (University of California, Davis)*



Dr. Elser is an associate professor in the Zoology Department of Arizona State University where he has taught Limnology and Introductory Biology since 1990. He has participated in research and teaching in limnology and oceanography in a variety of settings in abroad.

His research interests have spanned a variety of areas, including algal physiological ecology, limnological optics, nutrient limitation, plankton community structure, microbial ecology, and food-web interactions. Dr. Elser's current work focuses on nutrient cycling and food-web dynamics using the perspectives of ecological stoichiometry in understanding how balanced or imbalanced supplies of multiple nutrient elements regulate ecological processes in pelagic ecosystems. Dr. Elser's research has extended in scale from the flask to the lake basin and he has pursued this work in the U.S., Canada, Russia, and the oceans of Antarctica and North America.

Dr. Elser has served the aquatic science community via ASLO (session organizer, Student Poster Award judge, Lindeman Award Committee member, ad hoc reviewer for the Challenges for Limnology in the U.S. and Canada report, reviewer for *Limnology and Oceanography*). In addition he has served as a panelist and ad hoc reviewer for NSF, and reviewer for various academic journals (*Ecology*, *Canadian Journal of Fisheries and Aquatic Sciences*, *American Naturalist*, *Journal of Plankton Research*, *Journal of Phycology*, and others). Dr. Elser is currently organizing an NSF-funded workshop to facilitate increased U.S.-Mexico collaboration in the area of the environmental biology of deserts and oceans in the Sonoran boundary region.

Representative Publications

- Elser, J.J., M.M. Elser, N.A. MacKay, and S.R. Carpenter. 1988. Zooplankton-mediated transitions between N and P limited algal growth. *Limnol. Oceanogr.* 33:1-14. (This paper received ASLO's 1990 Raymond L. Lindeman Award.)
- Elser, J.J. and R.P. Hassett. 1995. A stoichiometric analysis of the zooplankton-phytoplankton interaction in marine and freshwater ecosystems. *Nature* 370:211-213.
- Elser, J.J., C. Luecke, M.T. Brett and C.R. Goldman. 1995. Limnological effects of food web compensation after manipulation of rainbow trout in an oligotrophic lake. *Ecology* 76:52-69.
- Elser, J.J., R.W. Sterner, T.H. Chrzanowski, J.H. Schampel and D.K. Foster. 1995. Elemental ratios and the uptake and release of nutrients by phytoplankton and bacteria in three lakes of the Canadian Shield. *Microbial Ecol.* 29:145-162.

Elser, J.J., D.R. Dobberfuhl, N.A. MacKay and J.H. Schampel. 1996. Organism size, life history, and N:P stoichiometry: towards a unified view of cellular and ecosystem *BioScience*: in press.

Candidate's Statement

These are "interesting times" for science, including the aquatic sciences. Great opportunities for collaboration and information transfer beckon from the Internet while human impacts on marine and freshwater ecosystems accelerate with expansion of population and industry. All the while, uncertainty regarding funding for aquatic research increases in a turbulent political climate. I would like to help in ASLO's efforts to act on our behalf in these rapidly changing times. In such an environment aquatic scientists need a flexible, pro-active society that enhances scholarship while simultaneously reaching out to related fields to expand research opportunities and to non-scientists where public support for scientific research is ultimately derived. These efforts should include enhancing the status of aquatic sciences within traditional funding venues but also developing new prospects for funding of innovative aquatic science research. I favor an "inclusive" ASLO that facilitates excellent science from all areas of aquatic science, including benthic ecology, stream ecology, and wetlands science. I also strongly support ASLO's efforts to expand its reach to all potential aquatic scientists via its minority program and other training efforts.

MEMBER-AT-LARGE

Ulf Riebesell

*Vordiplom 1983 (University of Kiel, Germany); M.Sc. 1988 (University of Rhode Island);
Ph.D. 1991 (University of Bremen, Germany)*



Dr. Riebesell is a research scientist at the Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany.

His research interests focus on biogeochemical and ecological processes in marine pelagic systems. Combining analytical and numerical modeling with laboratory and field measurements, his research activities concentrate on aspects of the oceanic carbon cycle. Current research topics include carbon acquisition in primary producers, carbon isotope fractionation in organic matter production and its potential as an indicator for physiological and paleoceanographic conditions.

Although mainly rooted within the European system, Dr. Riebesell has strong ties to the North American scientific community. He has spent several years of his career at institutions in the U.S. and continues to closely cooperate with North American colleagues. He has served as a referee for the U.S. National Science Foundation and has been a

member of ASLO since 1986. Dr. Riebesell is co-editor of the *Journal of Sea Research* and has served on review panels for various European science agencies.

Representative Publications

- Riebesell, U. 1991. Particle aggregation during a diatom bloom I. Physical aspects; II. Biological aspects. *Mar. Ecol. Prog. Ser.* 69:273-291.
- Riebesell, U. 1992. Factors controlling the formation of marine snow and its sustained residence in surface waters. *Limnol. Oceanogr.* 37:63-76
- Riebesell, U. and D. Wolf-Gladrow. 1992. The relationship between physical aggregation of phytoplankton and particle flux: a numerical model. *Deep-Sea Res.* 39:1085-1102. (This paper received ASLO's 1995 Raymond L. Lindeman Award).
- Riebesell, U., D. Wolf-Gladrow and V. Smetacek. 1993. Carbon dioxide limitation of marine phytoplankton growth rates. *Nature* 361:249-251
- Riebesell, U., M. Reigstad, P. Wassmann, T. Noji and U. Passow. 1995. On the trophic fate of *Phaeocystis pouchetii* (Hariot): VI. Significance of *Phaeocystis*-derived mucus for vertical flux. *Neth. J. Sea Res.* 33:193-203.

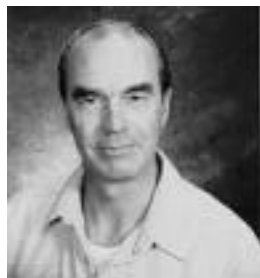
Candidate Statement

ASLO is a leading scientific society in the fields of freshwater and marine sciences, whose impact stretches far beyond the boundaries of North America. This is reflected not only by the large number of foreign scientists publishing in *Limnology and Oceanography* and attending ASLO meetings, but also by the significant proportion of ASLO members from countries outside the U.S (currently about 22%). Thus, although the main focus of ASLO activities naturally concentrates on North American issues, probably more than any other society in aquatic sciences ASLO has an international presence. This is bound to have increasing importance, particularly in view of the growing need for international cooperation, both scientifically and with regard to environmental issues. Stronger involvement of non-North American members in ASLO services and affairs could add valuable new perspectives and would be a step to further developing ASLO's international standing as well as improving international cooperation.

MEMBER-AT-LARGE

John C. Roff

B.A. 1964, M.A. 1967 (Cambridge University, England);
Ph.D. 1969 (Newcastle, England)



Dr. Roff is Professor of Zoology at the University of Guelph, Ontario, and Research Fellow of the University of the West Indies. He has been Visiting Scientist, Royal Society, England and at Memorial University in Newfoundland, and Associate Faculty of the Open University, England.

Emphasis in his research has been on pelagic communities, and interactions between the "classical" and microbial food webs, across a spectrum of productivity. Field research has combined quantitative observational and experimental ecology in tropical, temperate and arctic marine and freshwater. Current interdisciplinary, collaborative studies include: multi-fractal analysis of plankton distributions in relation to coastal heterogeneity in the Gulf of St. Lawrence; and laboratory development of new biochemical and radiochemical techniques to measure rate functions, especially zooplankton growth. Trophodynamic processes in streams have been an additional research interest. He is an active undergraduate teacher and graduate advisor.

Dr. Roff has served in various capacities for the Natural Sciences and Engineering Research Council of Canada; he has been Chair of its Evolution and Ecology Panel, a member of the Inland Waters and Oceans Strategic Grants Panel, and a member of the Life Sciences Reorganisation Committee. He is a member of the Editorial Board of the *Canadian Journal of Fisheries and Aquatic Sciences*, and has been Organiser and Treasurer for a Symposium on Hudson Bay and NABS and IAGLR Annual Conferences. He has also worked with the World Wildlife Fund to develop a geophysical plan for marine conservation. Locally, he has been a member of a southern Ontario Conservation Authority, and Vice-Chair of its Environmental Assessment Board.

Representative Publications

- Roff, J.C., R.R. Hopcroft, C. Clarke, L.A. Chisholm, D.H. Lynn G.L. and Gilron. 1990. Structure and energy flow in a tropical neritic planktonic community off Kingston, Jamaica. Pp. 266-280 in: M. Barnes and R.N. Gibson (eds.), *Trophic Relationships in the Marine Environment*, 1990. Aberdeen University press.
- Roff, J.C., J.T. Kroetsch and A.J. Clarke. 1994. A radiochemical method for secondary production in planktonic crustacea based on rate of chitin synthesis. *J. Plankton Res.* 16:961-976.
- Espie, P.J. and J.C. Roff. 1995. A biochemical index of moult rate for planktonic crustacea, based on the chitin degrading enzyme chitinase. *Limnol. Oceanogr.* 40:1028-1034.
- Roff, J.C., J.T. Turner, M.K. Webber and R.R. Hopcroft. 1995. Bacterivory by tropical copepod nauplii: Prevalence and possible significance. *Aquatic Microbial Ecol.* 9:165-175.
- Webber, M.K. and J.C. Roff. 1995. Annual biomass and production of the oceanic copepod community off Discovery Bay, Jamaica. *Mar. Biol.* 123:481-495.

Candidate Statement

Seventy-one percent of our planet's surface is covered by water; the oceans are its major feature. Yet few members of the public have any real appreciation of the fundamental biogeochemical processes within aquatic ecosystems or the environmental stresses to which they are subjected. ASLO is the premier society of aquatic scientists, and its members are the recipients of public funds for their research and education programs. We can expect that funding for the sciences will become increasingly competitive. The onus will be on us, via ASLO, to publicly advocate the necessity of our fundamental research in aquatic science, and its significance and applications in environmental management, and conservation.

Within ASLO, I believe we must foster collaborative scholarship, especially with our junior members, and actively promote a broader environmental and societal perspective on our individual disciplinary studies.

MEMBER-AT-LARGE

Karen F. Wishner

B.A. 1972 (University of Chicago);
Ph.D. 1979 (University of California at San Diego,
Scripps Institution of Oceanography)



Dr. Wishner is a Professor of Oceanography at the Graduate School of Oceanography at the University of Rhode Island, where she has been since 1980. She has also taught at Southwestern College in San Diego and at the University of California at Santa Cruz and spent a sabbatical at the Institute of Oceanographic

Sciences in England. She has taught graduate and undergraduate students in the classroom and at sea.

Her research interests are in marine zooplankton ecology and deep-sea biology, with a special emphasis on copepods. Recent interests include the study of oxygen minimum zones and carbon cycling in the Eastern Tropical Pacific and Arabian Sea, and whale / zooplankton / environment interactions off Cape Cod. She has extensive seagoing and submersible experience.

Her service to the community includes being the Audio-Visual Director for the 1986 ASLO meeting at the University of Rhode Island and serving on the Electorate Nominating Committee of AAAS (1991-1994), the UNOLS Submersible Science Study to Assess Research Submersible Requirements for the 1990's and Beyond (1987-1990), and a variety of review panels for NSF, NURP, and the National Research Council. She was elected a Fellow of AAAS in 1995.

CONTINUED GROWTH IN THE NUMBER OF SCIENCE PH.D.S

The 1994 Survey of Earned Doctorates found that universities conferred doctoral degrees in science and engineering &S&E) on 41,000 individuals (15,800 women and 25,200 men), up from 39,755 in 1993 and 31,300 (10,700 women and 20,600 men) in 1984. The percentage going into academe has fallen (from 57% in 1973 to 45% in 1991), and the percentage of those working in business/industry has increased (from 24% in 1973 to 36% in 1991). Although relatively low, the level of unemployment among S&E PhDs has increased (from 0.8% in 1985 to 1.6% in 1993) for all

Representative Publications

- Wishner, K., E. Durbin, A. Durbin, M. Macaulay, H. Winn and R. Kenney. 1988. Copepod patches and right whales in the Great South Channel off New England. *Bulletin of Marine Science* (Zooplankton Behavior Symposium issue) 43:825-844.
- Wishner, K., L. Levin, M. Gowing and L. Mullineaux. 1990. Involvement of the oxygen minimum in benthic zonation on a deep seamount. *Nature* 346:57-59.
- Wishner, K. F. and M. M. Gowing. 1992. The role of deep-sea zooplankton in carbon cycles. Pp. 29-43 in, Rowe, G.T. and V. Pariente (eds.) *Deep-Sea Food Chains and the Global Carbon Cycle*, Kluwer Academic Publishers.
- Wishner, K. F., J. R. Schoenherr, R. C. Beardsley and C. Chen. 1995. Abundance, distribution, and population structure of the copepod *Calanus finmarchicus* in a springtime right whale feeding area in the southwestern Gulf of Maine. *Continental Shelf Research* 15:475-507.
- Wishner, K. F., C. J. Ashjian, C. Gelfman, M. M. Gowing, L. Kann, L.A. Levin, L. S. Mullineaux and J. Saltzman. 1995. Pelagic and benthic ecology of the lower interface of the eastern tropical Pacific oxygen minimum zone. *Deep-Sea Research* 42:93-115.

Candidate Statement

I find myself increasingly troubled by the confusing and often contradictory trends evident these days in scientific research, funding, and education. University administrators clamor for increased tuition revenue while cutting faculty and services; federal agencies encourage the development of human resources while the proposal success rate (and the graduate student support therein) declines; our students, mostly recruited for and trained in state-of-the-art research, face such bleak job prospects that they often must seek alternative careers and additional training. Can we, as the pre-eminent society for limnologists and oceanographers, help to formulate guidelines, suggestions, and innovative approaches to bring some order into this chaos? We must find ways to maintain excellence and creativity in limnological and oceanographic research and education in spite of diminishing resources and to provide appropriate guidance to those entering the field. ASLO has become more active in some of these areas in recent years and I would like to build on these efforts.

PhDs and for those 1-2 years after receiving their PhD (from 1.5% in 1985 to 2% in 1993). Overall, the 1993 unemployment rate of 1.6% for all scientists and engineers with PhDs and 2% for recent recipients of science and engineering PhDs compares favorably with the overall unemployment rate of approximately 6% or more, the rate of 2.6% among general professional occupations, and the rate of 3% among those with at least a college degree.

Copies of the report, Summary Report 1994: Doctorate Recipients from United States Universities" are available from the Office of Scientific and Engineering Personnel, National Research Council, 2101 Constitution Ave., NW, Room TJ2006, Washington, DC 20418 (Tel: 202-334-3161).

ASLO AWARD

JOHN H. MARTIN RECEIVES ASLO CITATION FOR SCIENTIFIC EXCELLENCE

The Citation for Scientific Excellence was awarded this year to John Holland Martin, who has revolutionized our understanding of plankton rate processes, carbon cycling and the role of trace metals in regulating ecosystem structure, and whose work has stimulated some of the most significant findings of the last decade. The ASLO Citation for Scientific Excellence was initiated in 1987 to recognize members who could not fulfill their career potential because of early death or disability. While the bestowing of this award is always tinged with sadness due to the circumstances under which it is given, it is still with great pleasure that we recognize the work of our most accomplished members.

Those honored previously by this award are: Carl J. Lorenzen (1987), in recognition of innovative and imaginative studies of phytoplankton pigments in the ocean; and Peter Kilham (1990), in tribute for his many and significant contributions to aquatic science, in particular in the fields of biogeochemistry and African limnology, and in memory of intellectual enthusiasm and stimulation he always offered colleagues in the Society.

The award was presented by ASLO President Nancy Marcus to John's wife, Marlene Martin, at the February, 1996 AGU/ASLO Ocean Sciences Meeting. Her comments on accepting the award are included below, following a summary of John's career by Ken Johnson.



Marlene H. Martin receives Citation for Scientific Excellence on behalf of John H. Martin (see remarks, p. 18).

John Martin Remembered

Kenneth S. Johnson, Moss Landing Marine Laboratories, PO Box 450, Moss Landing, CA 95039

John Martin died on June 18, 1993, at the peak of his career. He left an indelible mark on the field of marine biogeochemistry, particularly his studies on the role of metals in regulating marine ecosystems. John's work culminated in his studies of the role of iron as a limiting nutrient in the ocean. I believe that this will be the most significant development in oceanography of the decade.

His work and life were characterized by a tenacity that belied the elegance of his scientific results. John was born in

Old Lyme, Connecticut on February 27, 1935. He overcame polio during his early college years. This left him temporarily incapacitated in an iron lung, hospitalized for a year and with a lifelong disability. Yet, he never acknowledged the difficulties created by this ailment. Perhaps, it was the tenacity required to survive that molded his approach to science. John chose difficult subjects and worked persistently until they yielded to him. His tenacity allowed him to turn terribly difficult scientific questions into beautifully crafted works of science.

I first met John in 1984 when I was using the Research Vessel Cayuse, which was operated by Moss Landing Marine Laboratories (MLML). Over the next few years I came to enjoy the visits with John more than the cruises on the ship, which rolled so rapidly that the acceleration could cause the bridge crew to black out. It's a testimonial to John that he recognized this and was able to obtain a much more appropriate vessel, the RV Point Sur for Moss Landing. The lure of working with John ultimately brought me to Moss Landing in 1988 to work more closely with him.

John's work focused on biological and chemical interactions in the sea. It spanned a broad variety of topics. He was a pioneer with those who made the first accurate measurements of metal concentrations in the ocean. His work on uncontaminated measurements of primary production revolutionized our understanding of how to make plankton rate measurements in seawater. His work on carbon flux has had a strong impact on our understanding of oceanic carbon cycling.

John's skill as a scientist will not be his only legacy. His leadership as Director at MLML for 18 years established the laboratories as one of the finest small marine stations in the world. He accomplished all this while still remaining a compassionate and caring leader who set a model of excellence. In the words of one National Academy member, "John was the only administrator I ever liked".

John's work began with his thesis studies at the University of Rhode Island, which focused on the role of zooplankton in regulating nutrient cycles in Narragansett Bay. After graduating from URI, he moved to the Puerto Rico Nuclear Center in 1966 as an Associate Scientist to continue his studies of chemical-biological interactions. It was here that John was exposed to the concepts of big science. One of the topics at Puerto Rico was using nuclear explosives to open a new Panama Canal and he was involved in the studies to understand the environmental consequences.

John left Puerto Rico in 1969 to move to the Monterey Peninsula. He was married to Marlene Hunt in 1969 and their first son, Ian, was born on the Monterey Peninsula in 1972. A second son, Andrew, was born in 1975. Marlene continues to serve as Chair of the English Department at Monterey Peninsula College and she takes some of the credit for John's writing skills, including mystery stories. John joined the Hopkins Marine Station of Stanford University as an Acting Assistant Professor. He expanded his study of

chemical and biological interactions during this time with his first grant from the National Science Foundation. His successful interaction with George Knauer also began at Hopkins. George was John's first student, and they began their long collaboration on studies of the processes that control metal distributions in the ocean. Their paper (Martin and Knauer, 1973) on the trace chemical composition of plankton is still widely quoted as a standard reference, despite the enormous difficulties that faced early trace element chemists.

John was hired as an Assistant Professor at MLML in 1972. His work on trace element chemistry expanded greatly at MLML. He began research on the role of metals in marine pollution which ultimately became an integral part of the U.S. Mussel Watch program to monitor marine environments. At the same time, John and graduate student Mike Gordon became heavily involved in the painstaking work needed to measure metals at ambient concentrations in seawater. Much of this work was carried out closely with Ken Bruland at UCSC. They collaborated on an almost daily basis to develop the sampling and analytical methods widely used by marine chemists today. The outcome of this cooperation was a key paper that described the detailed procedures necessary to analyze metals in seawater (Bruland et al., 1979).

With the techniques for trace metal analyses at ambient levels in hand, Martin and his colleagues Bruland and Knauer were among the leaders in reporting the first reliable measurements of metals in seawater. Martin and Broenkow (1976) published the first accurate measurements of Cd coincidentally with those of Ed Boyle. The first reliable measurements of Zn were described by Bruland, Knauer and Martin (1978). The first complete vertical profiles for Co, Fe and Ag were later reported. John's favorite element during this period was manganese. He wrote 6 papers on Mn cycling from 1980 to 1985. The first paper on Mn biogeochemistry (Martin and Knauer, 1980) describes some of the earliest reliable measurements of Mn in the water column. Martin and Knauer also measured the vertical Mn flux with sediment traps. This work demonstrated the importance of particulate organic matter in transporting Mn through the water column.

John's interest in the application of sediment traps to the study of metal cycles led him to organize the VERTEX program, which served as the core for much of his best known research. John was coordinator of the VERTEX project from its inception in 1981 to 1988. He assembled an outstanding group of scientists to perform one of the first large, multidisciplinary studies of biogeochemical cycling. Over 150 publications were produced by the VERTEX group on subjects ranging from biology to chemistry to physics. In many ways, VERTEX served as a model for the current JGOFS program, on whose steering committee John served from 1984 until his death.

The work by the MLML trace metal group found a new application in measurements of primary production by the ^{14}C method during the late 1970's. John's earliest work had

focused on the role of organisms in modifying trace chemical distributions in the ocean. With Knauer and graduate student Steve Fitzwater, he began to study the role that contaminant metals might have in biasing estimates of carbon fixation. They demonstrated that minute amounts of contaminant metals, especially zinc and copper, could greatly reduce measured rates of primary production (Fitzwater, Knauer and Martin, 1982). This work sparked an enormous amount of controversy, but it was ultimately confirmed by many other laboratories (e.g., Chavez and Barber, 1987). Stringent anticontamination procedures are now recognized to be essential for plankton rate measurements.

John's work on iron limitation began with a VERTEX paper on dissolved iron distributions and its potential impact on plankton productivity (Martin and Gordon, 1987). This was followed shortly by a series of papers which demonstrated that iron stimulation of the uptake of nutrients and production of chlorophyll in incubations of seawater from areas with high surface nutrient concentrations and low standing stocks of chlorophyll. A potential role for iron limitation was shown in the sub-Arctic Pacific (Martin and Fitzwater, 1988), the Antarctic (Martin, Gordon and Fitzwater, 1990) and the equatorial Pacific (Martin, 1992). This led to John's suggestion that the iron flux to the ocean may be an important control on global plankton productivity, atmospheric carbon dioxide and global temperature (Martin, 1990).

The proposal that iron availability limits primary production in large areas of the global ocean sparked an outburst of controversy. This controversy arose, in part, because of John's suggestion that iron fertilization of the ocean could limit the increase in atmospheric carbon dioxide and mitigate the fossil-fuel greenhouse effect (Martin, Gordon and Fitzwater, 1990). Exchanges of comments on the hypothesis appeared in *Nature*, *Limnology and Oceanography*, *Journal of Geophysical Research* and *Global Biogeochemical Cycles*. The National Research Council held a workshop to consider the merits of iron fertilization of the ocean. A meeting was sponsored by ASLO at San Marcos, California on 22-24 February 1991 to debate "What controls phytoplankton production in nutrient-rich areas of the open sea?" The results of the meeting were published as the December 1991 issue of *Limnology and Oceanography*. It was clear from the meeting report that, although there was substantial data that supported the concept of Fe as a limiting nutrient, the role of iron could only be determined by performing an open ocean fertilization experiment.

Following a workshop held under US JGOFS auspices, John organized a cruise to perform the first open ocean iron fertilization experiment in October and November of 1993. The successful planning for this cruise was a tribute to John's leadership skills. He recognized that the iron fertilization component was too controversial to survive NSF review and too expensive for ONR to support alone. The cruise was broken into two legs with a less controversial study of iron/phytoplankton interactions around the Galapagos Islands supported by NSF and the fertilization supported by ONR.

During the initial stages of planning, John was diagnosed with cancer. He led the planning and coordination despite repeated hospitalizations. Although John did not live to see the cruise take place, it was an unqualified success, which reflected the skill with which he built the program (Martin et al., 1994). Significant increases in primary production, chlorophyll, autotrophic biomass and heterotrophic biomass all occurred in response to iron fertilization. The follow-up cruise in 1995 provided even stronger confirmation. Repeated iron fertilization of a patch of ocean depleted more than half of the nitrate and drew down surface water PCO₂ by 100 atm.

The ability to regulate oceanic ecosystems on an experimental basis will open a new era for oceanographers. Experimental manipulations of small patches of the ocean will allow studies of the ocean to be performed in the same manner that ecologists now study ecosystems on land. This new era of experimentation may well be one of John's greatest legacies to oceanography. John recognized this potential and used to joke that his research group would become "Blooms R' Us".

John Martin's influence on oceanography has been pervasive. He revolutionized our understanding of plankton rate processes, carbon cycling and the role of trace metals in regulating ecosystem structure. His work has stimulated some of the most significant findings of the last decade. I believe that it is entirely appropriate to honor these contributions with the ASLO Citation for Scientific Excellence.

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Marlene H. Martin's Remarks

Marlene H. Martin, 26455 Via Mallorca, Carmel, CA 93923

If John were here today to accept this award, he would have two distinct responses. He would be a little uncomfortable by all the attention. John always told me he was shy—something I didn't witness in our 24 years together. He covered any stray shy feelings with a thick facade of New England gruffness.

More importantly John would have been gratified and delighted by the recognition given his work both in his research and in the oceanographic community. John was a jock with a competitive spirit he brought to science when he could no longer compete on the baseball diamond or soccer or football fields.

But as a jock, John was a team player, and he would want very much to say that his success is due in large part to his very important teammates—those colleagues he referred to as "the troops"—in alphabetical order Steve Fitzwater, Mike Gordon, Craig Hunter, and Sara Tanner. He was also grateful to those of you who would venture forth to test his idea in the ocean. John would tell me not to mention names or someone important will be left out. So—as usual ignoring the letter of his law—I want to mention those who assumed the leadership of IronEx: his colleagues and friends at Moss Landing—most directly Kenneth Coale and Ken Johnson, and on the other side of the country at Duke, Dick Barber.

There has been much speculation in the press about whether or not John really thought he could become the Dr. Strangelove of Global Climate. He was very clear that he did not intend the Geritol solution to be the major answer to the build up of greenhouse gases. In interviews, he always stressed that the answers are far more complex. Science cannot provide a quick fix for the destruction we *Homo sapiens* wreak on our environment. And he believed we have already engineered the atmosphere of our planet, but we have done so accidentally. We have played what Walley Broecker calls Russian Roulette with global climate.

John's three big points were that we must limit global population, cut down on fossil fuel use, and treasure our forests—those in our country as well as Third World rain forests.

A recent issue of *Science News* said that John was pessimistic about our chances of behaving so sensibly. Dick Barber pointed out that "realistic" was a better word than "pessimistic". I hate having someone so upbeat, someone for whom life was so precious, called pessimistic. But, in fact, he did not think our species would act wisely or expeditiously. He thought we should start looking around for some viable alternatives to help us repair our damage. He thought any such partial solution would need to be tested repeatedly over at least a decade before it was tried in a major way.

When I finally realized that John was going to lose the battle with cancer, I was overwhelmed by the idea of a universe without him. This award today is a reminder that in many ways, his legacy lives on. This award honors scientists who are willing to take risks, to ask creative questions, to tilt at windmills—and sometimes even come up the winner.

JOBS

POSITIONS OPEN WITHIN ASLO

ASLO Business Office

The American Society of Limnology and Oceanography is soliciting proposals for handling the business affairs of the society. The Business Office is responsible for a variety of tasks including: handling the financial affairs of the society, preparing the annual budget and periodic updates, reconciling the budget, and arranging for yearly audits; production and mailing of society materials; membership and subscription matters, maintenance of the membership data base; and other day-to-day matters that arise. The Business Office should have modern communication and computer capabilities including phone, fax, and e-mail. The Business Office works closely with the Treasurer, Executive Director, Secretary and President of the society and should have the ability to establish and maintain electronic data bases with sorting capabilities and transfer files electronically. The Business Office can be located anywhere in the U.S. The Society currently has about 4,000 members and 1,600 subscribers, and sponsors at least one national meeting per year. Review of applications will begin May 1, 1996 and continue until the position is filled. For more detailed information please contact ASLO President Nancy Marcus, Department of Oceanography, Florida State University, Tallahassee, FL 32306 (Tel: 904-644-5498; Fax: 904-644-2581; marcus@ocean.fsu.edu).

Managing Editor with Strong Technical Editing Skills Wanted for L&O

Lyn Cole has announced her impending retirement from L&O and plans to step down in late 1996. We will start our search for her replacement in the near future, and a complete ad will be published soon. In the meantime, for further information, contact David Kirchman, College of Marine Studies, University of Delaware, Lewes, DE 19958 (kirchman@udel.edu).

SUGGESTIONS FOR EDUCATING THE U.S. CONGRESS ABOUT SCIENCE

The following suggestions were supplied by the National Academy of Sciences:

- **Contact your congressperson through his/her district office, in his/her state.** Many members receive all sorts of appeals and supplications in Washington, DC. An approach from home is far more potent.
- **Invite that member to visit** your facility, laboratory, company or research institution.
- **In explaining the value of your work:**
 - **Avoid technical jargon.** Very few members of Congress have much technical training. Nevertheless, they are very interested in the value of science and technology to society. So simply stating the value of the work you do in plain terms can pay large dividends. Simple audio visual materials and other demonstrations can be effective.
 - **Avoid a discussion of funding** at first. Members of Congress receive appeals for more funds dozens of times during the course of a week. It is far more effective that your first contact be simply to explain your work.
 - **Make sure to provide basic data about your organization**, such as the number of employees, the annual budget, your annual sales, etc. These can serve as important points of reference for a Congressman, especially about the value of your institution as a local economic entity.
- **Volunteer to help the member of congress** by being willing to provide advice and answers to technical questions in the future, or to contact colleagues on his/her behalf. Many people ply Congress with a lot of pleas for funding and favors, but surprisingly few volunteer objective information, with no strings attached.

ASLO MEETINGS

1996 ASLO ANNUAL MEETING, MILWAUKEE, WI, JUNE 16-20

Arthur S. Brooks, ASLO-96, Center for Great Lakes Studies, University of Wisconsin-Milwaukee, 600 East Greenfield Ave., Milwaukee, WI 53204 (Tel: 414-382-1704, Fax: 414-382-1705; abrooks@csd.uwm.edu)

A full slate of papers, posters and social activities is in place for the 1996 annual ASLO meeting in Milwaukee, June 16-20. Items for the auction are rolling in, but there is room for lots more. Show your support for ASLO by sending donations to the address above—or bring them along to the meeting. The astounding Arbacia the Magnificent is working hard to perfect some astonishing magical feats. People have been made to disappear, but their return has not been perfected as of this date....It promises to be an exciting evening. In the meantime, nominations for participation in the act will be accepted if accompanied by an appropriate contribution to the endowment fund.

Given the budget problems of government agencies, some ASLO members were unable to secure travel funds prior to the original abstract submission deadline. In order to accommodate anyone wishing to submit a paper at this time, the **deadline for accepting abstracts for poster presentations has been extended until May 15**. Abstracts submitted from now until May will be distributed with registration materials at the meeting. Abstract and registration forms were distributed with the original call for papers and will also be included in the program and abstract book which will be mailed in late March. Forms may also be downloaded from the ASLO WWW home page,

<http://www.ngdc.noaa.gov/paleo/aslo/aslo.html>

Midwest Express Airlines will give a 6% discount to all persons booking flights to Milwaukee for ASLO '96. For each 30 tickets booked, one free ticket will be donated to the ASLO auction to benefit the endowment fund. Midwest Express Airlines flies non-stop to Milwaukee from most major cities on both coasts and the midwest, offering first-class amenities at coach prices. When making reservations, reference file number C-371 and /CM6 as the ticket designator. Tickets may be booked through your travel agent or with Midwest Express at 800-452-2022.

ASLO has also negotiated with American Airlines and with Association Travel Concepts (800-458-9383 or 619-458-9588; Fax 619-458-0364) to obtain additional discounts on travel to ASLO meetings:

- Receive up to 10% off the lowest American Airline fare for the Milwaukee meeting;
- Receive 20% agency commission rebate;
- Be entered into a drawing for free tickets (you must reserve your tickets through Association Travel Concepts to be eligible for their drawing; drawing will take place at the Milwaukee meeting).

For the Milwaukee meeting, you can also call the official carriers direct or your local travel agency and refer to the appropriate ID numbers listed for travel discounts:

American Airlines: 800-433-1790 Starfile# 6966AB

Alamo Rent A Car: 800-732-3232 ID# 378966GR

We are looking forward to a great meeting by a Great Lake!

STUDENT POSTER AWARDS: JUDGES NEEDED FOR ASLO '96 MEETING IN MILWAUKEE

Michael Arts, ASLO '96 Student Poster Awards Chair, National Hydrology Research Institute Environmental Sciences Division, 11 Innovation Blvd., Saskatoon, Saskatchewan, Canada S7N 3H5 (Tel: 306-975-6012; Fax: 306-975-5143; artsm@nhri.sk.doe.ca)

Have you ever considered being an ASLO Poster Judge? It's an educational experience that gives you the chance to learn more about work being done outside your primary area. The quality of the posters in past years has been high. The student's efforts are often outstanding and a great deal of insight into effective poster design and execution can be gained through the judging process (this may actually help you to make your own posters!). You will be asked to judge only 10 posters so there will be plenty of time to view the others and catch up with your colleagues. Each poster is judged by at least two judges and the top 20% are evaluated by a team of at least four judges. Posters are judged on their scientific significance and innovation as well as the quality of the experimental design and methods. The visual quality and impact of the poster is also an important consideration. Please join in the fun and learning, meet new friends -- become a poster judge on the next Student Poster Award Committee. Just send your name, address, phone, and fax to me at the above address/e-mail.

EDUCATION WORKSHOP AT ASLO '96, MILWAUKEE

C. Susan Weiler, Executive Director, Biology Dept., Whitman College, Walla Walla, WA 99362 (Tel: 509-527-5948; Fax: 509-527-5961; weiler@whitman.edu)

A workshop on "Illustrative materials and laboratory, field and computer exercises for undergraduate aquatic science courses" will be held Sunday, June 16 from 0900 - 1700 h. Patrick Brezonik, University of Minnesota, chair of a recent study committee of the National Academy of Sciences on the status and future directions for education in limnology, will present an overview of the committee's work and recommendations. The committee's report will be published as a book "Freshwater Ecosystems: Revitalizing Educational Programs in Limnology" by the National Academy Press later this spring. The report deals with both undergraduate and graduate education in limnology and recommends a range of curricular and administrative (programmatic) reforms, as well as ways to improve the linkages between education and professional practice in limnology.

Jim Cotner will describe the current status of the ASLO slide/video collection and lead a discussion on its future development. Please bring your favorite slides/videos to share! Several special topics will be addressed, including an illustrated talk on stream characteristics and ecology by Bert Cushing (Bert has made his slide set available through ASLO; please follow his excellent example!). Contributions are still welcome. The deadline for submitting abstracts for oral or poster presentation is March 31, 1996. Abstracts will be distributed at the workshop and through the ASLO home

page. Send a 1-page abstract which includes your name and address, phone, fax and e-mail, title and a brief description of your presentation via e-mail (weiler@whitman.edu). Be sure to specify any AV or computer equipment you require. If you plan to attend, please register early to guarantee a space. If you can't find the registration form (in the Program/Abstract book), just send me a statement of intent.

ASLO '97 AQUATIC SCIENCES MEETING IN SANTA FE, NEW MEXICO

Jonathan J. Cole, Institute of Ecosystem Studies, Cary Arboretum, P.O. Box AB, Millbrook, NY 12545 (Tel: 914-677-5343; Fax: 914-677-5976; 76067.3033@compuserve.com) and James T. Hollibaugh, Tiburon Center, San Francisco State University, P.O. Box 855, Tiburon, CA 94920 (Tel: 415-435-7141; Fax: 415-435-7120; jth@sfsu.edu)

The Aquatic Sciences Meeting will be held in Santa Fe, New Mexico, February 10-14, 1997. This will be the only ASLO meeting held this year in another conscious attempt to disrupt the "summer meeting only/winter meeting only" pattern that the Society seems to have fallen into.

Like its 1992 predecessor, this Aquatic Sciences Meeting will attempt to bring together scientists working in diverse aquatic environments (oceans, lakes, rivers, estuaries, streams, wetlands, etc). Steering committee members were chosen to represent both freshwater and saltwater and to cover a variety of disciplines. It is the intent of the co-Chairs and of the Steering Committee (Kenneth E. Bencala, Nina F.M. Caraco, James E. Cloern, Edna Graneli, Susan Kilham, Polly A. Penhale and C. Susan Weiler) that the majority of the sessions will include papers on both fresh and salt water

environments and that many will try to compare processes and applied issues across diverse aquatic environments. We are also making a special effort to solicit papers on rivers and streams, as these systems have been poorly represented at ASLO meetings in the recent past.

The format of the meeting will differ somewhat from that of the 1992 Aquatic Sciences meeting in that more contributed papers will be included in oral sessions and there will be fewer posters (and more room for the posters that are presented!). A number of exciting special sessions have already been proposed for inclusion in the meeting program. This list needs to be finalized by April 15, 1996, so make your proposals for additional special sessions to Jon Cole or Tim Hollibaugh, (or any other Steering Committee member) as soon as possible. As before, we encourage (but do not absolutely require) the organizers of special sessions to include presentations on both freshwater and marine environments. Please include a title and a description (up to 50 words) of the goals of the session. The Steering Committee will develop a final list of Special Sessions by 1 May, 1996.

The 1992 Santa Fe was a great success, both because of the setting and because of the science that was presented there. We have already detected a great deal of enthusiasm for the 1997 meeting. We are confident that the 1997 Aquatic Sciences meeting will provide the cross-fertilization that, to a large extent, is missing from the summer or winter meetings and that it will be an exciting meeting for all Society members.

CALENDAR OF EVENTS

Marine Phytoplankton Culture Techniques Course

Dates: May 13 - 17, 1996

Location: Boothbay Harbor, Maine

Topics: Course will be taught by Dr. Robert R.L. Guillard and Dr. Robert A. Andersen and will include methods for establishing or manipulating cultures for research and aquaculture, including various isolation and purification methods. Culture media will be described, including the composition, preparation, and sterilization of media. Physical factors such as light, temperature, salinity and aeration will be described. A brief discussion of algal systematics will be presented, including a survey of living representatives from classes containing marine phytoplankton.

Contact: Robert A. Andersen Director, Provasoli-Guillard National Center for Culture of Marine Phytoplankton (Tel: 207-633-9632; Fax: 207-633-9641; andersen@ccmp.bigelow.org).

Ross Sea Ecology (Antarctica)

Dates: May 14 - 16, 1996

Location: Taormina, Italy

Topics: physical and chemical properties of water masses, phytoplankton production, microbial communities, zooplankton, krill and top-predator interactions, nekton, role of benthos, ecological processes in the marginal ice zone, decomposition and the role of bacteria and microzooplankton, particle dynamics and biogenic sedimentation, and modeling approaches to the planktonic ecosystem. Purpose is to present an integrated vision of past research, to debate results, and to explore plans for the next 5 years.

Contact: Antonella Granata (fax: 39-90-393409; guglielmo@eniware.it).

39th Annual Conference on Great Lakes Research

Dates: May 26 - 30, 1996

Location: Mississauga ON, Canada

Topics: Special Sessions will cover a variety of current large lakes issues such as the effectiveness of international management agreements, endocrine disrupters, non-native species, effects of UV radiation, human health, sea lamprey controls, satellite imagery, food web interactions, and wetland restoration

Contact: W. Gary Sprules, Dept. Zoology, Erindale College, University of Toronto, Mississauga, ON L5L 1C6 Canada (Tel. 905-828-3987; Fax 905-828-3792; gsprules@cyclops.erin.utoronto.ca).

IGARSS '96: International Geoscience and Remote Sensing Symposium

Dates: May 27 - 31, 1996

Location: Lincoln, Nebraska

Topics: Remote Sensing for a Sustainable Future.

Contact: IEEE Geoscience and Remote Sensing Society, 2610 Lakeway Dr., Seabrook, TX 77586 (Tel: 713-291-9222; Fax: 713-291-9224; stein@harc.edu).

NATO Advanced Study Institute, Physiological Ecology of Harmful Algal Blooms

Dates: May 27 - June 6, 1996

Location: Bermuda Biological Station for Research

Topics: To assess our understanding of the fundamental physiological and ecological issues underlying harmful algal blooms (HABs), to identify inadequacies, impediments, and promising areas for future research, and to advance and disseminate new approaches and technologies.

Contact: Donald M. Anderson, Biology Department, MS #32, Woods Hole Oceanographic Institution, Woods Hole, MA 02543-1049, USA (Fax: 508-457-2134; danderson@whoi.edu).

American Society of Ichthyologists and Herpetologists, and American Fisheries Society Larval Fish Conference

Dates: June 13 - 19, 1996

Location: New Orleans, Louisiana

Contact: ASIH Meeting, Metropolitan College Conference Services (ED 116), Univ. of New Orleans, New Orleans, LA 70148 (Tel: 504-386-6680; Fax: 504-286-7317; <http://www.utexas.edu/depts/asih/index.html>) or Richard F. Shaw, Host, Larval Fish Conference, Coastal Fisheries Inst., Wetland Resources Building, Louisiana State University, Baton Rouge, LA 70803.

ASLO 1996 Annual Meeting

Dates: June 16 - 20, 1996

Location: Milwaukee, Wisconsin

Topics: Full range of aquatic science. Program will be mailed to members in March. See p. 20 for more information.

Contact: Arthur Brooks, Center for Great Lakes Studies, University of Wisconsin-Milwaukee, Milwaukee, WI 53201 (Tel: 414-382-1704; Fax: 414-382-1705; abrooks@.csd.uwm.edu).

10th Workshop, International Association of Phytoplankton Taxonomy and Ecology

Dates: June 21-30, 1996

Location: Granada, Spain

Topics: Phytoplankton ecology across trophic gradients; and The taxonomy of Chrysophytes, Euglenophytes and Volvocales.

Contacts: Miguel Alvarez Cobelas, Centro de Ciencias Medioambientales (CSIC), Serrano 115 dpdo., E-28006 Madrid, Spain (Fax: 34-1-5640800; ccmalim@cc.csic.es) or Pedro Sanchez Castillo, Dept. Biología Vegetal, Fac. Ciencias, Univ. Granada, Avda. Fuentenueva s/n., E-18001 Granada, Spain (Fax: 34-58-243254; psanchez@ugr.es).

Second World Fisheries Congress

Dates: July 28 - August 2, 1996

Location: Brisbane, Australia

Topics: The congress theme is Developing and Sustaining the World Fisheries Resources: The State of the Science and Management. Sub-themes will focus on international policy, research, and scientific issues. The congress is hosted by the Australian Society for Fish Biology.

Contact: Second World Fisheries Congress, P.O. Box 1280, Milton QLD 4064, Australia (Tel: 617-369-0477; Fax: 617-369-1512).

11th International Association of Astacology Symposium

Dates: August 11 - 16, 1996

Location: Thunder Bay, ON

Canada

Topics: Freshwater Crayfish.

Contact: Walter T. Momot, Dept. Biology, Lakehead Univ., 955 Oliver Rd., Thunder Bay, ON Canada P7B 5E1 (Tel: 807-343-8277; Fax: 807-346-7796; wmomot@gale.lakeheadu.ca).

PORSEC '96: Pacific Ocean Remote Sensing Conference

Dates: August 13 - 16, 1996

Location: Victoria, B.C.

Canada

Topics: Remote sensing in support of oceanographic and fisheries programs in the Pacific; Remote sensing in support of coastal management in the Pacific Rim; Comparison of ocean measurements from acoustic and satellite sensing.

Contact: S. Tabata, Institute of Ocean Sciences, P.O. Box 6000, 0860 W. Saanich Rd., Sidney, BC V8L 1B2 (Tel: 604-363-6573; Fax: 604-363-6746; tabata@ios.bc.ca).

Ecological Society of America Annual Meeting

Dates: August 11-14, 1996

Location: Providence, Rhode

Island

Topics: "Ecologists as Problem Solvers." Meeting will include a symposium on the Freshwater Imperative.

Contact: Jill Baron, ESA Program Chair, jill@nrel.ColoState.edu.

6th Stockholm Water Symposium

Dates: August 11 - 16, 1996

Location: Stockholm, Sweden

Contact: Stockholm Water Company, S-106 36 Stockholm, Sweden (Fax: 46-8-736-2022).

Third International Penguin Conference

Dates: September 2-6, 1996

Location: Cape Town, South Africa

Topics: The conference is being organized by the African Seabird Group, under the broad theme, "Penguins: science and management".

Contact: Organizing Committee, Third International Penguin Conference, African Seabird

Group, P.O. Box 34113, Rhodes Gift 7707, South Africa (Tel: 27-21-650-3294 Fax: 27-21-650-3295; jcooper@botzoo.uct.ac.za).

8th International Conference on Physics of Estuaries and Coastal Seas

Dates: September 9 - 11, 1996

Location: Rijkswaterstaat, The Netherlands

Topics: Circulation and mixing processes; Chaotic dispersion; Sediment transport; Non-linear estuarine and coastal hydrodynamics; and morphodynamics of estuaries and coastal seas.

Contact: Maarten Scheffers, National Institute for Coastal and marine Management/RIKZ Kortenaerkade 1, P.O. Box 20907, 2500 EX, The Hague, The Netherlands (Tel: 31-70-3114258/225; Fax: 31-70-3114321; scheffer@rikz.rws.minivew.nl).

Vth INTECOL International Wetlands Conference

Dates: September 22 - 28, 1996

Location: Perth, Western Australia

Topics: Theme is "Wetlands for the Future" with emphasis on our current understanding of wetlands, the importance of conservation and management, and the role of technology in maintaining wetlands in the future. Topics will include: Physical, chemical and biological processes; modeling; applied research, technology and management; and policy and planning. This conference follows a series of international wetland meetings held every 4 years.

Contact: Jenny Davis, School of Biological and Environmental Sciences, Murdoch University, Murdoch, Western Australia 6150 (Tel: 61 9 360 2939; Fax: 61 9 310 4997; davis@essun1.murdoch.edu.au)

Radionuclides in the Oceans (RADOX 96-97)

Dates: October 7 - 11, 1996

Location: Cherbourg-Octeville, France

April 7 - 11, 1997

Norwich and Lowestoft, U.K.

Topics: Radionuclides in the oceans. First meeting will focus on inventories, behavior and processes, while the second will focus on impacts on man and the environment, including radiologic and environmental protection and modeling.

Contact: Tel: 44-1502-56224; Fax: 44-1502-513865.

Ocean Optics XIII: Ocean Optics and Quantitative Ocean Remote Sensing

Dates: October 22 - 25, 1996

Location: Halifax, Nova Scotia, Canada

Topics: A technical conference on basic and applied research issues pertaining to ocean optics and quantitative optical remote sensing of the ocean. Papers, in the form of oral presentations and posters, are sought in: Radiative Transfer Theory; Instrumentation and Sensor Development; Laboratory and Field Experiments; and Applications

Contacts: Steven G. Ackleson, Office of Naval Research, 800 N. Quincy Street, Arlington, VA 22217 (Tel: 703-696-4732; ackless@onrhq.onr.navy.mil) and Trudy Lewis, Lewis Conference Services International, Richmond Terminal, Pier 9, 3295 Barrington St., Halifax, NS Canada B3K 5X8 (Tel: 902-492-4988; trudy@predator.ocean.dal.ca).

ASLO 1997 Aquatic Sciences Meeting

Dates: February 10-14, 1997

Location: Santa Fe, New Mexico

Topics: Building on the success of ASLO '92 in Santa Fe, this meeting will cover the full range of aquatic sciences (see page 21). You should receive a flyer about the meeting in May. The Call for Papers will be mailed in mid August. Please contact Jon Cole or Tim Hollibaugh about special session topics (deadline for topics is May 1).

Contact: Jonathan J. Cole, Program Committee Co-Chair, (76067.3033@compuserve.com), James T. Hollibaugh, Program Committee Co-Chair (jth@sfsu.edu), C. Susan Weiler, Meeting Organizer (weiler@whitman.edu) or Trudy Lewis, Lewis Conference Services International (Tel: 902-492-4988; trudy@predator.ocean.dal.ca).

7th Stockholm Water Symposium, 3rd EMECS Conference

Dates: Mid-August, 1997

Location: Stockholm, Sweden

Topics: Theme is "With Rivers to the Sea: Interactions of Land Activities, Fresh Water and Enclosed Coastal Seas."

Contact: Stockholm Water Company, S-106 36 Stockholm, Sweden (Fax: 46-8-736-2022).

3rd International Conference on Reservoir Limnology and Water Quality

Dates: August 31 - September 5, 1997

Location: České Budejovice, Czech Republic

Topics: Aim: bring together limnologists and water quality engineers dealing specifically with reservoir limnology or topics relevant to understanding, predicting and managing reservoir quality. Topics: geographic peculiarities of reservoirs; nutrient cycles and eutrophication; food web interrelations; spatial heterogeneity; global climatic changes and reservoirs; sedimentation and sediment-water interactions; Ecotechnological measures of reservoir management; integrated catchment management; reservoir fisheries; and mathematical modeling.

Contact: Jaroslav Vrba, Hydrobiological Institute, Academy of Sciences of the Czech Republic (Tel: 42-38-45484; Fax: 42-38-45718; hbu@dale.entu.cas.cz) or Wayne A. Hubert (Tel: 307-766-5415; Fax: 307-766-5400; whubert@uwyo.edu).

TURNER DESIGNS AD

BIOSPHERICAL INSTRUMENTS AD