

ASLO BULLETIN

American Society of Limnology and Oceanography

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MESSAGE FROM THE PRESIDENT

ASLO CROSSROADS AND DECISIONS

John T. Lehman, Division of Biological Science, Natural Science Building, University of Michigan, Ann Arbor, MI 48109 (Tel. 313-763-4680; Fax 313-747-0884; Omnet J.Lehman)

During the next six months, the ASLO Board of Directors will be engaged in discussions that ultimately will have profound consequences for the operations of the society. My purpose with this message is to inform you of impending developments and to invite you to voice your own informed opinions. The major outcome of this effort will be improved communication with the membership about issues, and a commitment to ensure that major ASLO initiatives enjoy broad support within the society.

In previous communications, I have referred to the "Future of ASLO Report", which was developed in 1988 under the chairmanship of Kenneth Mann. In response to that unpublished report, a series of experimental changes in ASLO operations have been implemented, ranging from journal operations to staffing and financial operations. Many of the decisions were made ad hoc among the Board or Executive Board to deal with immediate situations or cases

at hand without formal, documented consideration of wider applications. Those past actions are justifiable to the extent that ASLO was experimenting with new modes of operation, and to the extent that our journal remained strong, the meetings vibrant, and our treasury healthy.

We now have accumulated several years of experience with the ad hoc decisions. During the next few months, Board members and advisory committees will be developing reports and position papers that present options and recommendations for ASLO actions.

Specifically, we are dealing with three major issues.

1. The office of the Executive Director has been in existence for three years. Its creation was an experiment that resulted in the *ASLO Bulletin*, as a service for members. In the course of operations, both the Board and the incumbent, Sue Weiler, have determined that the original job description was not sufficiently defined. Reporting relations, obligations, and guidelines for financial compensation need to be defined. A committee composed of Polly Penhale and Nancy Marcus is developing a report on this matter.

—Copies of the *Committee on the Future of ASLO Report* are available from Susan Weiler (address below)—

The ASLO Bulletin is published 3 times annually by the American Society of Limnology and Oceanography to provide members with up-to-date information on Society activities and to serve as a forum for open discussion.

EDITOR: Dr. C. Susan Weiler, ASLO Executive Director, Dept. Biology, Whitman College, Walla Walla, WA 99362, USA
Tel: 509-527-5948; Fax: 509-527-5961; Omnet: s.weiler

TARGET DATES for 1994 submissions: Feb. 10, July 10, & Oct. 10, 1994.

ADVERTISING: Jobs, opportunities: \$14/line (80 characters & spaces per line); send to Susan Weiler (address above).

For-Profit advertisers: Camera-ready copy only. Send to Karen Hickey (address below).

MOVING?

Please send your change of address to: **Karen J. Hickey**, ASLO Business Office,
P.O. Box 1897, Lawrence, KS 66044-8897 Tel: 913-843-1221; Fax: 913-843-1274; Omnet: k.hickey

2. In a report to the Board, the Ethics Committee, chaired by Diane McKnight, has proposed that ASLO also establish a standing committee "to advise the editor of the journal on ethical issues involving papers submitted to or published in the journal, and to investigate and adjudicate if necessary (see article, p.3). As proposed, the Ethics Committee would refer ethical issues unrelated to the journal that were brought to the committee to the appropriate institution or organization." Position papers are being developed here, too, as well as opinions from ASLO legal counsel on necessary procedures and potential tort liabilities.

3. Requests for large increases in financial outlays have been proposed in areas of new Editorial office, Executive Director compensation, and Board/Executive Board expenditures, including travel, committee expenses, and meeting participation expenses. Because decisions in this area have an immediate influence on society solvency, I've asked a blue ribbon task force, chaired by Al Beeton and composed of Larry Pomeroy, Robert Wetzell, Ellie Prepas, and Ed Houde, to consult with our treasurer and business office, and to develop strategic options for our continued financial health over the next 5 to 10 years.

The decisions we face involve major financial obligations, choices among trajectories of expenditures, and potential legal liabilities of the society. We face accelerating costs

which reduce our scope for continuing experimentation without turning to you, the dues-paying members, for substantially increased revenues. The decisions should thus be well informed ones, arrived at by wide consensus.

With this in mind, it is my hope that the members of the Board and the various committees will use the time between now and the February Board meeting in San Diego to develop their position reports. At that meeting, the board will discuss the various alternatives to provide further clarification and articulation. With the authors' approval, the reports themselves, and the summary from our Board deliberations will be distributed, so that all members can be well-informed on these issues, and so that they can formulate and discuss their own opinions.

The intended result will hopefully be a well-attended ASLO Business Meeting in Miami, where the results of Board votes will be discussed and a slate of issues presented to the members for clarification and further discussion. Both the agenda and slate of issues will be printed and distributed prior to the business meeting to ensure efficiency. The business meeting should occur at a morning session early in the week, perhaps at a plenary session, to permit full participation. My goal, admittedly experimental, is to renew a strong sense of membership participation and interaction with ASLO affairs and goal-setting.

ASLO NEWS

REQUEST FOR NOMINATIONS FOR MEMBERS-AT-LARGE AND SECRETARY

Curtis Suttle, Nominations Committee Chair, Marine Science Institute, University of Texas at Austin, P.O. Box 1267, Port Aransas, TX (Tel: 512-749-6733; Fax: 512-749-6777; Internet: curtis@utmsi.zo.utexas.edu;

Omnet: c.suttle)

The Nominations Committee (Curtis Suttle, Chair, Mike Pace, Suzanne Levine) is seeking individuals who would be willing to stand for election as Member-at-Large or Secretary, two extremely important positions in the Society. Three of seven Member-at-Large positions will be open, as well as the position of Secretary. Members-at-Large serve essentially as the "Board of Directors" and are directly responsible for all major decisions affecting the Society. These are the elected individuals who must represent the broad interests of the Society in terms of its scientific, cultural and financial objectives.

The nominations committee is looking for individuals from a diversity of backgrounds. There is no need to feel that one must be an "old time" member of ASLO to be considered as a candidate for Member-at-Large. Secretary is also an extremely important position in the Society. This individual oversees many of the operations of the Society and works closely with the Executive Director (Susan Weiler) and meeting committees.

If you know of an individual that you would like to see in one of these positions, or would like to be considered yourself, drop me a note either electronically or by mail (see above), or contact one of the other members of the commit-

tee. Please include the name of the person and why (he, she or you) could represent the Society. Indicate if you know whether the individual would be willing to serve, or write your nominations on the bright yellow, pre-addressed mailer and send it to me. The deadline for nominations is one week after receipt of this Bulletin. We REALLY want to open up these positions to all the members of the Society. We need to hear from YOU.

ASLO MEETINGS: HOST INSTITUTIONS SOLICITED FOR 1995 AND BEYOND

Polly A. Penhale, ASLO Secretary, College of William and Mary, Virginia Institute of Marine Science, Gloucester Point, VA 23062 Omnet: p.penhale; Internet: ppenhale@nsf.gov)

Now that plans for the Feb. 21-25, 1994 ASLO/AGU Ocean Sciences Meeting in San Diego and the June 12-16, 1994 meeting in Miami are well under way, it is time to consider future meetings.

ASLO has had a long tradition of holding its annual meeting on a University campus. Our first meeting independent of AAAS was held in 1948, at the University of Maryland, College Park. With only two exceptions (1965 and 1992) we have always had at least one meeting per year on a university campus. Members seem to have a strong preference for this arrangement, citing the low-cost dormitory housing as a significant benefit to students, a preference to keep meeting funds within the university rather than for-profit convention centers, the opportunity to visit institutions with strong aquatic science programs, and the collegial

atmosphere provided by the university setting. However, this tradition cannot continue without the help of ASLO members willing to work with their university to host the meeting on campus.

Meeting planning requires a long lead time, and it is not too early to consider sites for the 1995 summer meeting and beyond. If you would be willing to help host a future meeting, or have a location in mind, please let me know. Prior hosting and institutional size are not issues; many universities have hosted more than one meeting, and many have used a combination of university and off-campus sites to accommodate participants. The only requirement is a willingness to join with all the dedicated and enthusiastic volunteers who have helped to make our past meetings so successful, both in terms of scientific content enjoyment. Please help the ASLO meeting tradition continue by volunteering your time!

ETHICS COMMITTEE REPORT: ETHICAL ISSUES AND L&O

Diane M. McKnight, Chair, ASLO Ethics Committee, USGS-WRD, 3215 Marine Street, Boulder, CO 80303 (Tel: 303-41-3015; Fax: 303-447-2505; Omnet: d.mcknight)

In addition to developing a draft Code of Professional Conduct (which was published in the previous Bulletin), the Ethics Committee considered ethical issues related to the publication of *Limnology and Oceanography*. The ethical issues relevant to the journal are narrower in scope than those addressed in advisory manner in the draft Code of Professional Conduct. We identified some issues, such as providing timely and unbiased reviews, that are also advisory in nature. However, other issues clearly are potentially very serious issues for the journal, specifically falsification, fabrication, and plagiarism, known in the ethics jargon as "FF & P". Situations involving F F & P are known to arise in the publication process of scientific journals. The Ethics Committee reached a consensus that because *Limnology and Oceanography* was a publication of ASLO, the society would benefit from having an established policy in the event that an accusation of F F & P should arise. Publication in L&O is a voluntary action, and an established policy would be accessible to potential authors before submission of a manuscript.

Our committee also considered the possible difficulties presented to the Editor of L&O if he or she was required to continue to edit the journal and have primary responsibility for addressing such an issue. We recognized that at some point the process could be transferred to an established committee. Potential advantages of a standing committee would be that any questions of bias in the composition of an ad hoc committee are avoided and that the issue could be handled expeditiously and discretely. On the other hand, hopefully an issue requiring consideration by such a committee would never arise, and the effort in maintaining a standing committee would be for naught.

Presented below are some of the DRAFT materials prepared by the Ethics Committee that: 1) describe ethical issues in publication of L&O, which are intended to be

advisory or educational in nature, and 2) describe a possible charge to a standing ASLO Ethics Committee. The Ethics Committee has also prepared a draft procedure for addressing, if found, issues involving the journal. As John has noted in the his message to the membership, the ASLO Board is currently considering legal advice. The Ethics Committee would appreciate any comments from the membership on these draft materials, and on the general issue. Please direct comments to me, the members of the ethics committee (Bob Howarth, Charles Trick, Mary Voytek, and Pat Wheeler) or to members of the ASLO Board by January 10, 1993.

DRAFT: Considerations Related to Procedures and Policies in the Publication of *Limnology and Oceanography*

ASLO recognizes that the publication of the journal is dependent upon the participation of many individuals. In participating in the publication process, these individuals are advised to consider the following various and different responsibilities and issues:

• Responsibilities of the Editor and Associate Editors:

1. Maintain confidentiality of peer review process;
2. Ensure timely review of a manuscript;
3. Ensure objective and critical evaluation of the manuscript;
4. Evaluate potential conflict of interests;
5. Take responsibility for the final decision; and
6. Respond to questions of authors and referees.

• Additional Responsibilities of Editor:

1. Conduct initial inquiry into allegations of misconduct as described below; and
2. Address complaints involving associate editors.

• Issues to be addressed in "Instructions to Authors":

1. Papers containing falsification and fabrication of data and results, serious plagiarism, and duplication of open literature without proper citation will not be published. However, journal policy encourages publication in the open literature of analysis of data and results from archival reports and theses with proper citation.
2. Journal policy encourages responsible authorship in which individuals who have made contributions in several aspects of the paper are included and individuals who have not contributed substantially are not included. Co-authors are considered to be accountable with the lead author for all aspects of the paper.

• Issues involving reviewers:

1. Reviewers are encouraged to disclose potential conflicts of interests.
2. Reviewers should ensure the confidentiality of privileged material contained in the manuscript.

• Issues involving questionable research practices:

1. Journal policy encourages complete reporting of results and procedures to ensure repeatability.
2. Journal policy encourages retention of data, results and records at least 5 years after publication.

• Issues involving other misconduct:

Ethical violations in conducting reported research includ-

ing mistreatment of animals, unauthorized release of genetically engineered organisms, unauthorized major perturbations to the environment (e.g. introduction of exotic species), will preclude publication of that research in the journal.

DRAFT: Charge to a proposed standing committee on Ethics

The Ethics Committee will revise and update the Code of Professional Conduct as deemed necessary. The Ethics Committee will provide advice to the Editor regarding ethical issues, and will investigate and adjudicate allegations of misconduct involving falsification, fabrication and plagiarism related to the journal.

The Ethics Committee will handle reports of professional misconduct unrelated to the journal by providing general guidance or in specific cases participating in the investigation of misconduct by an appropriate institution or agency.

The Ethics Committee will be chaired by a member of the ASLO Board and the Chair will select four additional members with approval from the ASLO Board. It is desirable that the Ethics Committee have a composition that:

1. Covers major disciplines;
2. Includes representatives from U.S. and Canada; and
3. includes junior and senior members of the society (i.e. grad/post-docs to full professors)

Replacements can be appointed by the Chair in the cases of conflict of interest and inaccessibility (i.e. cruise commitment). Expedition of the process must be a priority.

ASLO/NABS SYMPOSIUM ON THE REGIONAL ASSESSMENT OF FRESHWATER ECOSYSTEMS AND CLIMATE CHANGE IN NORTH AMERICA PLANNED

Diane M. McKnight, symposium co-chair, USGS WRD, 3215 Marine St., Boulder, CO 80303 (Tel: 303-541-3015; Fax: 303-447-2505; Omnet d.mcknight)

ASLO and the North American Benthological Society (NABS) are jointly planning a symposium entitled "Regional Assessment of Freshwater Ecosystems and Climate Change in North America". Alan P. Covich is co-chairing the effort with me and representing NABS. Other members of the steering committee are: William M. Eichbaum, Nancy B. Grimm, George H. Leavesley, John M. Melack, David W. Schindler, Stephen H. Schneider, C.E. Cushing (ex officio) and C. Susan Weiler (ex officio). This symposium will build on the successes of a previous NABS symposium "Global Climate Change and Freshwater Ecosystems" and of the ASLO symposium "What Controls Phytoplankton Production in Nutrient-Rich Areas of the Open Sea?".

Background: Despite their heterogeneity and complexity, it can be asserted that inland waters generally exhibit dynamic changes in response to changes in hydrology and climate. Because they are so responsive and because inland waters integrate the effects of human activities within the surrounding landscape, these ecosystems have the potential to amplify local, regional, and global effects.

Over the past century and before, freshwater ecosystems in North America have been altered by human activity.

These impacts include construction of reservoirs and diversions, channelization, acidification, eutrophication, introduction of agricultural, industrial, and municipal wastes, and the deliberate and accidental introduction of exotic species. Over time, these inputs have changed in scale, with climate change representing an impact at the global end of the spectrum. There will be an interplay between the effects of the more localized current stresses on inland water ecosystems and their response to global-scale changes. For example the presence of a reservoir may impede the movement of species tolerant of new hydrologic conditions into a river reach.

Over the past few decades, the increase in greenhouse gases such as CO₂ and CH₄ have been dramatic and well documented. Global Circulation Models (GCM's) indicate that the magnitude of the increases are sufficient to cause warming trends of several degrees as a global average. Inland water ecosystems will respond to the changes in temperature, precipitation, and evapotranspiration at the local or regional scale in a more immediate way than to the changes in globally averaged temperature. The development of mesoscale models that are coupled to GCM's allows for calculation of potential responses at regional scales.

Because aquatic resources are so critical to human well-being, it is imperative that potential impacts from human activities be understood and that scientists work closely with policy makers to ensure that management decisions are made on the basis of the best available data.

It is our opinion that it is now possible to link predictions from GCM's with mesoscale models to make prediction about the potential impact of a global doubling in CO₂ on aquatic ecosystems at the regional level. Further, by working with agencies such as the EPA and with policy makers, we can improve the flow of information between research scientists and resource managers. For this reason, ASLO and NABS have joined to hold a symposium to address this issue.

Symposium Goals: The goals of the symposium are to:

- evaluate current evidence for directional change in inland waters;
- examine potentially important responses to climatic changes resulting from a hypothetical doubling of atmospheric carbon dioxide (or its radiative equivalent); and
- develop recommendations for experimental studies or augmentation of monitoring programs.

Symposium structure and scope: In order to make the linkage between climate change and freshwater ecosystems, a regional approach will be taken, with eight regions identified to encompass the North American continent (**Figure 1**), including coastal/estuarine areas. Eight regional working groups composed of hydrologists and climatologists, as well as limnologists, will consider potential climate-change responses to a doubling in CO₂. A "synthesis" group of representatives from the various regional groups will integrate the work. These groups will conduct preliminary assessments and prepare presentations prior to the symposium.




Figure 1. This map of North America outlines the eight regions to be discussed at the ASLO/NABS symposium on the Regional Assessment of Freshwater Ecosystems and Climate Change in North America

sium. Where available, regional climate-change scenarios that have been developed from mesoscale models coupled to Global Circulation Models will be considered by the working groups.

The symposium itself will begin with thematic presentations, overviews of each of the eight regions, presentation of general hypotheses, and a poster session of contributed papers related to any aspect of freshwater ecosystems and climate change. The participation of limnologists with current interests and research in this area will be critical to the success of the symposium. A site for the symposium was chosen to accommodate up to 325 participants. We hope that a broad section of the community will attend, including students, postdocs, and established researchers.

During the second day of the symposium, the regional working groups will finalize an evaluation of the potential responses to regional climate change scenarios for a doubling of carbon dioxide in the atmosphere. The synthesis working group will also develop an overview report. The symposium will be organized to provide opportunities for participants to contribute to the discussions of the regional

and synthesis working groups.

On the third and final day, talks on the interaction between science and policy related to climate change will be presented and followed by a panel discussion. The day will include a presentation by a leader in environmental policy. The regional and synthesis working groups will also summarize their findings.

A special issue of *Limnology and Oceanography* is planned for the contributed and theme papers, and the regional working group reports may be published as a book or in a special issue of another journal. As for the 1991 ASLO symposium, a summary report is planned for release shortly after the symposium.

The symposium is currently scheduled for October 24-26, 1994 at a retreat-style facility (the Xerox Document University located 35 miles northwest of Washington, D.C. and four miles from Leesburg, Virginia). The symposium proposal has been submitted to EPA, USGS, and NASA, and will be submitted to NSF shortly. Once most of the funding has been secured a call for papers will be distributed to members of ASLO and NABS. Please contact me at the

above address if you have any questions.

SYMPOSIA FOR RECENT GRADUATES IN LIMNOLOGY AND OCEANOGRAPHY: COMMITTEE REPORT

C. Susan Weiler, Executive Director and Committee Chair

Existing efforts of ASLO and other organizations have not erased the historical, geographic and philosophical forces that limit the exchange of information between limnologists and oceanographers or removed the barriers raised by the institutional partitioning of limnology and oceanography. After consideration of several alternatives, the ASLO Board decided the best way to expedite and facilitate the development of a broad, interdisciplinary outlook among aquatic scientists and the exchange of information and ideas across disciplines and institutions would be through a program targeting recent Ph.D. recipients in both limnology and oceanography.

The Board voted to establish a Committee to develop a program and obtain external funding for a series of annual symposia for recent graduates in limnology and oceanography. Committee members are: C. Susan Weiler (Chair), Jonathan J. Cole, Carol L. Folt, Eileen E. Hofmann, Peter A. Jumars, Chris M. Luecke, Anthony F. Michaels, Jonathan H. Sharp, Michael J. Vanni, Bess B. Ward, Craig E. Williamson, and John T. Lehman (ex officio).

The committee communicated by mail, phone, and e-mail during initial program development. A final draft incorporating the suggestions of Committee members was then developed, and committee members who attended the ASLO '93 meeting in Edmonton met informally (Jon Cole, Tony Michaels, Jon Sharp, Bess Ward, Craig Williamson, and John Lehman and myself) to develop the final form. The result of our efforts is the Dissertations Initiative for the Advancement of Limnology and Oceanography (DIALOG).

The goals of the program are to:

- nurture the enthusiasm of young investigators;
- broaden their perspective of the field;
- expedite the entry of participants into the science network;
- catalyze the networking process by fostering an interdisciplinary outlook and long-term collegial associations and collaborations across the spectrum of limnology and oceanography; and
- foster interdisciplinary and inter-institutional research.

Inspired by Chemical Oceanography's Dissertations Symposia on Chemical Oceanography (DISCO) Program, the DIALOG program would concentrate on biologically oriented aquatic scientists who have recently obtained their Ph.D. degrees and wish to pursue interdisciplinary aquatic science research and benefit from the cross-fertilization derived from combining/integrating limnological and oceanographic research perspectives. We anticipate that approximately 40 recent Ph.D. recipients would meet annually for ca. 5 days at a retreat-style location to present their dissertation research, form working groups to address current issues in aquatic science, and generally develop associations with colleagues across the range of aquatic science disci-

plines and institutions.

I have discussed the idea with representatives of several federal agencies, and submitted a proposal to the National Science Foundation last July. If funding is obtained, we hope to hold the first program next year. If funded, announcements will be made in the ASLO Bulletin and other society newsletters or journals. Announcements and applications will also be sent to academic institutions with Ph.D. programs in aquatic science.

I would like to express my appreciation to all committee members. Several rounds of material were sent out, and all members responded by the deadlines with thoughtful, constructive input. This was truly a communal effort. It was also a very selfless effort, since none of the Committee members will be eligible for the program, which will be restricted to those no more than 2 years postdoctoral at the time of the meeting!

NSF...ON THE MOVE

*Phillip R. Taylor, OCE, National Science Foundation,
4201 Wilson Blvd., Arlington, VA 22230*

The National Science Foundation is relocating to a new facility in Arlington, Virginia. The move commenced in September, 1993, and will extend through early December, 1993. Directorate moves are scheduled over the entire transition period, with the Directorate for Biological Sciences relocating on September 17, 1993, and the Directorate for Geosciences relocating on November 12, 1993.

New telephone and Fax numbers will be introduced over the course of the fall and concurrent with the relocation of each directorate. The telephone directory will be updated frequently during this transition and will be posted on STIS. The new phone number for Biological Oceanography is: (703) 306-1587, effective after November 12, 1993.

For a period of several months following the move activity, calls placed to the old numbers will be intercepted, new number information will be provided, and the call will be forwarded to the new location in Arlington.

The new mailing address, however, will become effective on a one-time basis for the entire Foundation. Mail service is assured all Directorates throughout the move process, regardless of their location, through a carefully-developed transition plan. Effective October 25, 1993, the new mailing address is:

National Science Foundation
4201 Wilson Blvd.
Arlington, VA 22230

We encourage your use of e-mail for communication with our personnel over the course of the move; e-mail addresses will be unaffected by the relocation. Forms and publications will continue to be available via this method (BITNET:pubs@nsf or INTERNET:pubs@nsf.gov.). When placing your request, please be certain to include the NSF publication number and title, your name, and your complete mailing address.

ASLO LIFETIME ACHIEVEMENT AWARD INITIATED

Bess B. Ward, Lifetime Achievement Award Committee Chair, Marine Sciences Program, University of California, Santa Cruz, CA 95064 (Tel: 408-459-3171; Fax 408-459-4882; Internet: bbw@cats.ucsc.edu; Omnet: b.ward)

ASLO is pleased to initiate a new award for ASLO members. It is designated to recognize and honor major, long-term achievements in the fields of limnology and Oceanography, including research, education and service to the community and society. It is distinguished from the Hutchinson award in its intention to recognize a lifetime of work. The Hutchinson award is intended to acknowledge a body of work or research accomplishments in the last 5-10 years. This second category of award is being initiated because the large number of late-career researchers with outstanding records has made it difficult for individuals in mid career to be considered for the same award; even though the Award Committee has been attuned to this problem, more nominations have been received for late-career researchers than for those in mid career.

The nomination process for the new award shall be the same as for other ASLO awards: A nominations committee, chaired by a member of ASLO's elected members-at-large, will solicit and accept nominations from the members. Nomination committees for the Lifetime Achievement

Award and the Hutchinson Award will confer in order to assure that nominations are submitted to the appropriate committee. Nominations will be in the form of a letter from the nominator describing qualifications, and any supporting material deemed appropriate. The committee will solicit further information if necessary and vote by secret ballot after discussion of the candidates. The Awardee shall be notified and presented with a commemorative plaque at ASLO's annual meeting.

Please contribute nominations to the first ever ASLO Lifetime Achievement Award to be presented at ASLO's meeting in Miami in June, 1994 (instructions on page 11).

ASLO STUDENT POSTER AWARDS : JUDGES NEEDED

Susan Weiler, Chair, ASLO Student Poster Award Committee, Dept. Biology, Whitman College, Walla Walla, WA 99362 (Tel: 509-527-5948; Fax: 509-527-5961; Internet: weiler@whitman.edu; Omnet: S.Weiler)

This year ONR has provided us with additional funding so that we can make six \$500 awards for outstanding student poster presentations, three at the ASLO/AGU Ocean Sciences Meeting in San Diego (February 21-25, 1994) and three at the ASLO/PSA meeting in Miami (June 12-16, 1994). To prevent judge burn-out, no one judge will evaluate more than 11 posters. Each poster will be examined by at least three judges. This means lots of volunteers are needed and relatively little effort is involved! If you will be attending either or both of these meetings, please contact me at the above address, and tell me which meeting(s) you will be attending.

AD, BIOSPHERICAL INSTRUMENTS

ASLO FORUM

THE GROUP FOR AQUATIC PRIMARY PRODUCTIVITY (GAP)

Richard D. Robarts, National Hydrology Research Center/Environment Canada, 11 Innovation Blvd., Saskatoon, SK S7N 3H5, Canada

GAP was established in 1989 at the XXI SIL (International Society for Theoretical and Applied Limnology) Congress in Tokyo, Japan. It is a working group of both SIL and INTERCOL. The purpose of GAP workshops is to bring together fresh- and marine- water scientists to:

- access the status of knowledge on aquatic primary production, in particular with respect to current and future methodology;
- perform joint field experiments using different techniques to test comparability and reliability; and
- define gaps and re-assess global research goals for the future.

GAP is run by an international committee composed of: R. D. Robarts (Chair, Canada), T. Berman (Israel), S.Y. Maestrini (France), M. Sakamoto (Japan), B.B. Prézelin (USA), Z. Dubinsky (Israel), J. Beardall (Australia) and K. Richardson (Denmark).

GAP holds workshops every other year. They are unique in that they bring a wide range of scientists together for an intensive, seven- to nine-day working session. Experimental results of the workshop are analyzed and published in international peer-reviewed journals, for example, the *Journal of Plankton Research* and *Hydrobiologia*.

Whether it is the investigation of fundamental aspects of photosynthesis or global warming, food web dynamics and enhancement, environmental impact assessments or contaminant impacts, GAP workshops make a significant contribution to those studies. This is done through the production of information which can be used by international practitioners in applied and theoretical fresh- and marine-water sciences.

GAP VI was held at the National Hydrology Research Centre, Environment Canada, in Saskatoon, Saskatchewan from 7-15 June, 1993. This was the first GAP workshop to be held outside of Europe or Israel and was attended by about 60 limnologists and oceanographers from around the world. The theme of GAP VI was "Effects of physical forcing on primary production processes in inland and marine environments".

The dominating characteristic of a GAP workshop is the frantic planning sessions and subsequent panic to attain lofty research goals in the field and laboratory in about one week. There was fierce competition for equipment and supplies between participants doing field work versus those doing laboratory work; frequently the lab workers found they were scooped by the field teams who were under stronger logistic pressures.

Lab participants worked with a variety of freshwater and marine cultures looking at, for example, the impacts of UV-B and UV-A on production and respiration. A large field group (Redberry Army) focused their attention on the inter-

esting characteristics of Redberry Lake, a local saline (Mg- and SO₄ dominated) lake with high DOC concentrations (~35 mg/l). The euphotic zone extended almost to the bottom (16 m), where the chlorophyll maximum occurred. Large numbers of *in situ* incubations of primary production examining P Vs I characteristics and the impact of ultraviolet radiation on productivity were done. On shore, the fundamentalists were busy with their "trons" (light incubators). In keeping with the theme of the workshop, the weather changed from calm, warm days to stormy, overcast and wet allowing dedicated "GAPpers" to look at changes in production relative to increased physical forcing.

Picoplankton were also of major interest to several at GAP VI. Large numbers of these organisms were found in Redberry Lake, causing Warwick Vincent to declare it the "picoplankton capital of the world".

Meanwhile, down at the South Saskatchewan River, the River Rats installed a massive array of high-tech equipment to continuously monitor benthic production and respiration. Besides these physiological measurements, they were also able to obtain some excellent scanning confocal laser micrographics of the benthic biofilms.

Arrangements have been made with the editor of the *Canadian Journal of Fisheries and Aquatic Sciences* to publish the experimental results from GAP VI following appropriate peer review.

At the GAP business meeting a number of decisions were made. Several members of the GAP International Committee retired and nominations were received for replacements. After 12 years as Chair, Tom Berman (Kinneret Laboratory, Israel) stepped down, but remains as a Committee member. During Tom's chairmanship, GAP has held a series of highly successful workshops and mini-workshops, such as the Eastern Mediterranean warm core eddy cruise, which resulted in a large number of publications in peer-reviewed journals (part volumes in *Journal of Plankton Research*, Vols. 6 (1984) and 7 (1985); *Marine Microbial Food Webs*, Vol. 4 (1990) and *Hydrobiologia*, Vol. 238 (1992)). I am the new chair of the International Committee. New committee members will be announced in due course.

GAP VII will be hosted by Peter LeB Williams and his organizing committee at the School of Ocean Sciences, Menai Bridge, Wales in 1996. In the interim, suggestions for mini-GAPS are being sought as are invitations to host future GAP workshops. Please contact me at the above address/ phone/fax if you have suggestions for these activities or want to be placed on the mailing list for meeting announcements.

YOUR NOMINATIONS NEEDED

...for individuals willing to stand for election as Member-at-Large or Secretary (see p. 2 for details). PLEASE write your nominations and a short rationale for recommending him/her/yourself for the position(s) on the enclosed, bright yellow pre-addressed mailer.

BIOLOGICAL DIVERSITY IN MARINE SYSTEMS (BIOMAR): A PROPOSED NATIONAL RESEARCH INITIATIVE

Cheryl Ann Butman, Applied Ocean Physics and Engineering Department, Woods Hole Oceanographic Institution, Woods Hole, MA 02543 and James T. Carlton, Maritime Studies Program, Williams College — Mystic Seaport, Mystic, CT 06355

The diversity of life in the sea is being dramatically altered by rapidly increasing and irreversible human activities: physical destruction and pollution are profoundly altering marshes, estuaries, coral reefs and most other coastal habitats and ecosystems; exploitation is leading to the striking decline of commercially important animals and plants in all seas; and biological invasions of exotic species are causing significant community changes and leading to the increasing homogenization of the world's coastal biota. Evaluating the scale and consequences of these changes is seriously compromised by critically inadequate knowledge of the patterns of and the processes that control the diversity of marine life. In turn, knowledge of biodiversity (the collection of genes, individuals, species, communities and ecosystems occurring in a geographically defined region) is the foundation both for understanding the structure and function of marine communities and for predicting the role of human-mediated and natural processes in changing the ocean's ecosystems.

Distinguishing and identifying species is at the heart of biological ocean science. If the basic players in the system are not known, then it is impossible to understand most basic system processes. Evidence from many sources indicates, however, that a vast majority of marine species remain undescribed. Recent application of new molecular genetic techniques to systematics now permits the recognition of previously unrecognized within-species diversity, multispecies complexes, and novel groups, and this new information has revolutionized understanding of ecology, of evolutionary biology and of fisheries management. But, at the same time, the systematic and taxonomic sciences have declined precipitously, resulting in fragmentary and incomplete bridges between molecular and morphological systematics. Consequently, practical, straightforward species identification — that is, recognition on a morphological basis of taxa now regarded as genetically distinct — is compromised just when species-specific information is critically needed for documenting biological diversity.

“Biological Diversity in Marine Systems (BioMar)”, a proposed national research initiative, is the result of a workshop sponsored by the National Science Foundation (NSF) Division of Ocean Sciences, convened in Denver, Colorado on March 28-29, 1993. The purpose of the workshop was to begin to develop a community-wide consensus on the research rationale for and the nature of a research initiative on the topic of marine biological diversity and systematics. The ultimate goal of the initiative is to improve the scientific basis for policy decisions regarding human influences on the diversity of life in the sea. The following conclusions and recommendations of this workshop are taken from the Workshop Report.

The three fundamental objectives of the proposed BioMar initiative are the following:

1) To understand the causes and consequences of changes in species, genetic and habitat diversity through process-oriented research on the determinants of species distribution and abundance;

2) To understand the biology and ecology of species that play pivotal roles in the maintenance and generation of diversity as it relates to community and ecosystem function and stability, that are threatened by human activities, or that are introduced through human agency; and

3) To improve and expand the field of systematics, through training, the development of new methodologies, and enhanced information dissemination.

To accomplish these objectives, the proposed BioMar initiative should involve the following program elements.

Process-oriented research: BioMar proposes support for research on:

- the processes that create, maintain and change diversity at the population, species and community levels, and on how changes in diversity affect ecosystem function;
- the causes of rapid declines in biodiversity in threatened habitats, such as bays, estuaries, coral reefs and oceanic islands, and over geological time;
- the biology and ecology of species that play pivotal roles in community and ecosystem function;
- the characteristics of newly successful species (e.g., “invaders” and “bloomers”) and of species particularly vulnerable to environmental change; and
- threatened species and/or ecosystems, where the research specifically encourages collaborative efforts between organismal biologists, ecologists, geneticists, and systematicists.

Systematics-oriented research: BioMar proposes support for research on basic systematics (including new molecular and morphometric techniques) of taxa which are poorly known and/or are important in understanding ecological processes, and for augmenting existing NSF-supported research programs to incorporate systematics expertise. In addition, BioMar proposes support for the documentation and publication of taxonomic data and descriptions that are important in delineating biodiversity patterns, and support for computer-based keys and species descriptions that will allow broad accessibility by the scientific community to new systematics results.

Advanced Education: BioMar proposes the establishment of graduate and postdoctoral programs, apprenticeships, workshops and short courses to support advanced training in systematics (e.g., combining new molecular and traditional approaches), and support for mid-career training of established scientists in new systematics methods.

It is now well-recognized nationally and internationally that there is an urgent need for research programs specifically on issues of biological diversity. BioMar seeks to improve knowledge of biodiversity in the oceans, and thus to provide the scientific basis for understanding the causes and consequences of changes in the diversity of life in the sea.

BioMar is motivated by serious concern for the conservation of marine life in the face of rapidly expanding threats from human activities. The timing is critical. Recent new research capabilities, new technologies and new ideas now provide remarkable opportunities for addressing compelling basic science questions on biodiversity in the world's oceans.

Copies of the workshop report, Biological Diversity in Marine Systems (BioMar) are available from the NSF, Division of Ocean Sciences, 1800 G Street NW, Washington, DC 20550).

NEW MARINE SCIENCE LABORATORY AT ECKERD COLLEGE

George K. Reid, Professor Emeritus of Biology, Collegium of Natural Sciences, Eckerd College, St. Petersburg, FL 33711

The Galbraith Marine Science Laboratory of Eckerd College was dedicated in April, 1993. This was a singular event, for it marked the institution as one of the few, "small, liberal arts colleges" that has an on-campus teaching and research facility of such stature.

The college (present enrollment: 1400 students) opened in 1960 as Florida Presbyterian College. The campus occupies 267 acres in south St. Petersburg and has 1 1/2 miles of waterfront on Boca Ciega Bay that joins Tampa Bay, thus providing direct access to the Gulf of Mexico. During its relatively short existence, the biology curriculum has centered about estuarine and marine studies. And with the acquisition of this new physical plant and greatly expanded equipment holdings, the orientation toward aquatic biology and ecology has been enhanced richly.

At a cost of \$2.9 million, the building of 16,700 square feet came into being through a gift from college supporters and John and Rosemary Galbraith. Laboratory space of 1500 square feet and its equipment was provided by a grant from the W. M. Kech Foundation of Los Angeles.

The plan of the building includes seven faculty laboratory/office suites, specialized research areas, five classroom laboratories, one seminar room and an auditorium that seats 87. Space is also designated for cooperative research with visiting investigators.

Present equipment includes conductivity-temperature-depth indicator, Hookah apparatus, ROTAP, research-quality compound, phase contrast, inverted and dissecting microscopes, scanning and transmission electron microscopes, salinometers, oxygen probes, blood gas analyzer, atomic absorption spectrophotometer, UV fluorometer, radiation detection equipment, refrigerated high-speed centrifuge, freeze-drying apparatus, single-channel seismometer and other items.

The Kech Wing holds a fully equipped aquarium room, computer laboratory, preparation area for work in analytical chemistry, a weather station and 11 individual work stations for about 24 students.

Eight full-time faculty offer courses and research opportunities in marine invertebrate biology and physiology, marine paleobotany, marine botany, microbiology, mammalogy, ichthyology, biogeochemistry, biological oceanography,

marine ecology, marine geology, geophysics and deep ocean crustal movements, and chemistry of marine and freshwater ecosystems. A senior thesis is required of all seniors and they are encouraged to present papers with their professor as co-author at meetings of appropriate professional societies and academies.

The Eckerd College campus is also the site of the Marine Mammal Pathobiology Laboratory — "the necropsy lab" that was opened in November, 1992. This facility, funded under the federal Endangered Species Act, is operated by the Florida Department of Natural Resources, Florida Marine Institute. Its purpose is biomedical research on manatees and other marine mammals. College faculty and students cooperate in the activities there through arrangement with John E. Reynolds III, Eckerd professor of biology and marine sciences — he is also Chair, U.S. Marine Mammal Commission, Washington, D.C.

The Galbraith Laboratory program places strong emphasis on its visiting scientist component. Persons interested in participating in same should write to: Dr. Gregg R. Brooks, Collegium of Natural Sciences, Eckerd College, 4200 S. 4th Ave., St. Petersburg, FL 33733.

WORKSHOP ON THE IMPACT OF UV-B RADIATION ON FRESHWATER ECOSYSTEMS

Craig E. Williamson, Dept. Earth & Env. Sciences, Williams Hall 31, Lehigh University, Bethlehem, PA 18015

Recent decreases in stratospheric ozone concentrations have stimulated a great deal of interest in the potential impact of increased levels of UV-B radiation on aquatic ecosystems, particularly in Antarctica where the austral spring ozone hole has been studied in some detail (see Smith et al. 1992, *Science* 255: 952-959). A workshop that focused on the impact of UV-B radiation on pelagic freshwater ecosystems was held in September 1993 at Lehigh University and at the Lacawac Sanctuary in northeastern Pennsylvania. The first two days of the workshop were devoted to comparing methods for measuring UV-B radiation in the water column. Recently developed submersible radiometers and spectroradiometers were deployed simultaneously along with microbial (viral and bacterial) dosimeters at several depths in an oligotrophic lake. Additional instrumentation comparisons were made on land and in a mesotrophic lake. During the remaining days freshwater, marine, and atmospheric scientists assembled in three working groups that focused on: 1) working up the data obtained in the instrument-dosimeter comparisons; 2) assessing the impact of UV-B radiation on phytoplankton and bacteria; and 3) the assessing the impact of UV-B on zooplankton and higher trophic levels. The proceedings of the workshop will be published as a special volume in *Archiv für Hydrobiologie's Ergebnisse der Limnologie* (Advances in Limnology) series. The volume will include the instrument-dosimeter comparison data, summary papers from the other two working groups, and research papers from the keynote speakers and other workshop participants.

1994 ASLO AWARD NOMINATIONS

NOMINATIONS FOR 1994 G. EVELYN HUTCHINSON MEDAL

Sally MacIntyre, Marine Science Institute, University of California, Santa Barbara, Santa Barbara, CA 93106 (Tel: 805-893-2363; Fax: 805-893-8062; Internet: sally@seaotter.ucsb.edu; Omnet: s.macintyre)

Nominations are being solicited for the G. Evelyn Hutchinson Medal. The medal is awarded annually to the individual who best exemplifies the standards of scholarship and creativity set by Professor Hutchinson's work in limnology and oceanography. The award is made in recognition of continued excellence in any aspect of limnology and oceanography. Emphasis in selection will be given for work done during the preceding 5-10 years. The award is intended to symbolize the quality and innovations toward which the society strives and to remind its members of these goals. ASLO members who have been honored with this award are: Richard C. Dugdale, W.T. Edmondson, Richard W. Eppley, Eville Gorham, John E. Hobbie, Gene E. Likens, Daniel A. Livingstone, Timothy R. Parsons, Trevor Platt, Lawrence Pomeroy, David W. Schindler and Robert G. Wetzel.

The 1994 medal will be awarded at the ASLO '94 meeting in Miami, Florida. Each nomination must be supported by a letter (not to exceed two pages) on qualifications. This letter should be crafted so that it could be the basis of the presentation speech for the nominee who is selected for the award. The nomination package may also include a list of important publications and other pertinent information, but in total this package shall be no more than three pages. A nomination letter can be supported by signatures of more than one ASLO member or a list of supporting signatures or letters can be sent to support the nomination package. Nominations should be sent to me at the above address. The deadline for receipt of nominations is February 15, 1994.

Note from the Committee Chair: The G.E. Hutchinson Medal is distinct from the newly created Lifetime Achievement Award (see below) in its recognition of scholarly and creative accomplishments in the last 5-10 years. With the introduction of the Lifetime Achievement Award it is hoped that more scientists in mid-career will be nominated for the Hutchinson Medal than in previous years. Medalists are selected by a committee based on nominations by ASLO members. Committee members this year are Richard Dugdale, W.T. Edmondson, Carol Folt, W.C. Kerfoot, Timothy Parsons, and myself. The award not only gives visibility to the recipient but to his or her research speciality, institution and ASLO. Submitting a convincing nomination will take at least an hour of your time—maybe two or three hours if you have to locate the nominee's vitae and get supporting letters. Please take the time to ensure that your colleagues are appropriately honored.

**Judges needed for ASLO Student Poster Awards.
Please see article on Page 7.**

NOMINATIONS FOR FIRST LIFETIME ACHIEVEMENT AWARD

Bess B. Ward, Lifetime Achievement Award Committee Chair, Marine Sciences Program, University of California, Santa Cruz, CA 95064 (Tel: 408-459-3171; Fax 408-459-4882; Internet: bbw@cats.ucsc.edu; Omnet: b.ward)

Nominations are being solicited for ASLO's new Lifetime Achievement Award, to be presented annually to recognize and honor major, long-term achievements in the fields of limnology and oceanography, including research, education, and service to the community and society. Emphasis in selection will be given for contributions of any aquatic scientist whose work continues to be recognized for its importance and long-term influence in aquatic sciences.

The 1994 award will be awarded at the ASLO '94 meeting in Miami, Florida. Each nomination must be supported by a letter (not to exceed two pages) on qualifications. This letter should be crafted so that it could be the basis of the presentation speech for the nominee who is selected for the award. The nomination package may also include a list of important publications and other pertinent information, but in total this package shall be no more than three pages. A nomination letter can be supported by signatures of more than one ASLO member or a list of supporting signatures can be sent to support the nomination package. ASLO's awards provide a unique opportunity to recognize our members and to publicize their accomplishments. Please send nominations and supporting material to me at the address above.

SCIENCE, TECHNOLOGY AND THE FEDERAL GOVERNMENT

The National Academy of Sciences, National Academy of Engineering, and Institute of Medicine Committee on Science, Engineering, and Public Policy has published a report, "Science, Technology and the Federal Government: National Goals for a New Era." The 54-page report includes 5 chapters (The Changing Context for Science and Technology; Science and Technology in Modern Society; National Goals for Science. The Federal Role in the Development and Adoption of Technology; and Conclusion and Next Steps); and an appendix summarizing federal funding of research and development in the United States. Copies are available from: National Academy of Sciences, Committee on Science, Engineering and Public Policy, 2101 Constitution Ave. NW, Washington, DC 20418.

NOMINATIONS FOR 1994 LINDEMAN AWARD

Erica J.H. Head, Biological Oceanography Division, Bedford Institute of Oceanography, P.O. Box 1006, Dartmouth, NS B2Y 4A2 (Tel: 902-426-2317; Fax: 902-426-9388; Omnet: E.Head)

Read any good papers lately??? Nominations from all ASLO members are invited for the 1994 Lindeman Award, to be presented at the ASLO '94 meeting in Miami, Florida. This award is presented annually in honor of Raymond L. Lindeman (1915-1942), to recognize an outstanding paper written by a young aquatic scientist. Such a paper may not be long, it may not contain years' worth of data and it may not represent a complete piece of work. What it must do is to leave the reader with some concepts, some ideas, or even just thoughts, which are new, and which will affect the reader's thinking in the future. Have you read such a paper recently? If so, and if the author is a young scientist, then please help him/her to gain the recognition that he/she deserves and needs to further his/her future career in our competitive world. Please send in your nomination soon!

Eligible papers must deal with the aquatic sciences, be written in English by an author who is no older than 35 years in 1992, and must be published in a 1992 volume of a peer-reviewed journal. Nominations should consist of a copy of the paper and a brief letter describing the impact of the paper on the field. Please send them to me at the address above.

The deadline for receipt of nominations is February 15, 1994.

The initial gift to create a fund for the Lindeman award was made in 1986 by Lindeman's colleague in graduate school, Charles B. Reif of Wilkes College, PA. Lindeman received his Ph.D. in March, 1941 from the University of Minnesota, and in Sept. 1941 began postdoctoral work with G. Evelyn Hutchinson at Yale. His career was cut short by his death in April, 1942; he was only 27. The paper for which he is most remembered was published posthumously in 1942 ("The trophic-dynamic aspect of ecology," *Ecology* 23: 399-418). This paper was a result of his thesis work on Cedar Creek Bog, Minnesota, and a draft version was completed before Lindeman joined Hutchinson at Yale. Hutchinson was instrumental in getting the manuscript accepted for publication (it was initially rejected by reviewers). This paper has since become the foundation for research on the flow of energy in plant and animal communities. For more information about Lindeman, see:

Cook, R.E., 1977, Raymond Lindeman and the trophic-dynamic concept in ecology, *Science* 198: 22-26; and

Reif, C.B., 1986, Memories of Raymond Laurel Lindeman, *Bulletin of the Ecological Society of America* 67: 20-25).

JOBS

The Interdisciplinary Research Training Group (RTG) at the University of Minnesota offers the following training opportunities in "Paleorecords of Global Change: Understanding the Dynamics of Ecosystem Response". Stipend provided for citizens, nationals or permanent residents of the U.S. For application, contact Sue Julson, University of Minnesota, Ecology, Evolution and Behavior, 1987 Upper Buford Circle, St. Paul, MN 55108. Tel: (612) 624-4238; Fax: (612) 624-6777. An Equal Opportunity Educator and Employer.

Postdoctoral Fellowship: One-year appointment, with the possibility of a 6-month renewal. Application deadline: January 1, 1994.

Graduate Traineeship: Three-year traineeships available for graduate study. Application deadline January 15: 1994.

Endowed fellowships for Ph.D. students at Lehigh.

Lehigh University supports an active program in earth and environmental sciences. Faculty presently conduct research in aquatic ecology, surficial studies, & tectonic processes. Lehigh's Kravis fellowships provide 12 months of stipend and tuition, and may be renewable. Support is also available through university fellowships and research and teaching assistantships. For applications & information contact the graduate admissions coordinator, Dr. Ed Evenson, Department of Earth & Environmental Sciences, 31 Williams Drive, Lehigh University, Bethlehem, PA 18015-3188, Tel: (215) 758-3659; Internet: ebe0@lehigh.edu; Fax: (215) 758-3677.

SUMMER UNDERGRADUATE INTERNSHIPS WORKING ON UV-B RADIATION IN LAKES

Lehigh University's Pocono Comparative Lakes Program offers research opportunities for undergraduates at the Lacawac Sanctuary in the lakes region of northeastern Pennsylvania. Four selected interns will work closely with senior investigators on the impact of UV-B radiation on plankton communities, including bacteria, phytoplankton, zooplankton, and ichthyoplankton. Research will involve use of advanced instrumentation and microcomputers. Stipend is \$2500 for the ten-week period June 1- August 10, 1994. Apply by March 15, 1994. For information or applications, contact Dr. Robert E. Moeller, Dept. Earth & Environmental Sciences, 31 Williams Drive, Lehigh University, Bethlehem, PA, USA, 18015-3188, Tel: 215-758-3693; Fax: 215-758-3677; Internet: rem3@lehigh.edu.

INTERNATIONAL DECADE FOR THE EAST AFRICAN LAKES: SCIENCE AND IMPLEMENTATION PLAN AVAILABLE

A report on the February, 1993 International Decade for the East African Lakes (IDEAL) workshop, held in Jinja, Uganda, was published in the last issue of the Bulletin. The Science and Implementation Plan has now been published as a PAGES Workshop Report, Series 93-2. Copies of the report may be requested from: PAGES Core Project Office, Barenplatz 2, CH-3011 Bern, Switzerland.

CALENDAR OF EVENTS, 1994

Symposium on Pacific Salmon and their Ecosystems: Status and Future Options

Dates: January 10 - 12, 1994

Location: Seattle, Washington

Purposes: Assess changes in anadromous Pacific Northwest salmonid populations; examine factors responsible for those changes; and identify options for restoring Pacific Salmon to the Northwest.

Contact: For information, Deanna J. Stouder, Fisheries Research Institute WH-10, University of Washington, Seattle, WA 98195 (Tel: 206-685-2724; Fax: 206-685-7471; Internet: stouder@u.washington.edu); to be included on future mailings, Continuing Education, College of Forest Resources, AR-10, University of Washington, Seattle, WA 98105 (Fax: 206-685-0790).

American Society of Limnology and Oceanography & American Geophysical Union: Ocean Sciences '94

Dates: February 21 - 25, 1994

Location: San Diego, California

Topics: Atmospheric sciences, estuarine sciences, limnology, oceanography, ocean technology. Contributed papers are encouraged in the following areas: large-scale transport and circulation; biogeochemical processes; land-sea interactions; ocean optics; polar oceanography; nearshore sediment transport and shelf sedimentation; planktonic and benthic food webs; air-sea chemistry and dissolved gases; whole-ecosystem experiments; particulate organic matter degradation and flux; and long-term research and data bases. **Topics are not limited to these areas:** Special sessions are also being organized.

Abstract Deadline: November 18, 1993.

Contact: ASLO members will automatically receive the Call for Papers. For other information contact Ocean Sciences 94, American Geophysical Union, 2000 Florida Ave. NW, Washington, DC 20009.

Zebra Mussel Conference

Dates: March 7 - 10, 1994

Location: Madison, Wisconsin

Topics: Conference will highlight current research into the biology and impact of zebra mussels, as well as the latest research on control options and systems developed to cope with mussel infestations. Presentations on other related nuisance aquatic organisms are also invited.

Abstract deadline: November 1, 1993

Contact: Clifford Kraft, University of Wisconsin Sea Grant Institute, 1800 University Ave., Madison, WI 53705-4094 (Tel: 414-465-2795; Fax: 414-465-2376; Internet: kraft@macc.wisc.edu)

Spring American Chemical Society Meeting

Dates: March 13 - 18, 1994

Location: San Diego, California

Topics: A major theme for this ACS meeting is aquatic chemistry. Several special symposia are planned: The Colloidal State in Seawater (focusing on: Observation and distribution of colloidal matter in seawater, composition of marine colloids, colloid dynamics (e.g., production, aggregation, microbial utilization) and state-of-the-art collection and analysis methodologies); and Measurement and Reactivity of Organic Materials in Natural Waters (covers recent findings on the quantification, characterization and transformation of dissolved, colloidal and particulate organic matter in marine and freshwater environments. Interactions between these different phases and the role of microbiological processes on organic geochemistry will receive strong emphasis).

Abstract Deadline: November 1, 1993

Contact: Mark L. Wells (Colloidal symposium), Inst. Marine Sciences, 272 Applied Sciences Bldg, UCSC, Santa Cruz, CA 95064 (Tel: 408-459-3877; Fax: 408-459-4882; Omnet: m.wells); or Jim Bauer (Measurement symposium), Dept. Chemistry, B-169, Florida State University, Tallahassee, FL 32306-3048 (Tel: 904-644-9696; Fax: 904-644-2581; Omnet: w.landing).

American Society of Limnology and Oceanography & Phycological Society of America: 1994 Joint Meeting

Dates: June 12 - 16, 1994

Location: Miami, Florida

Topics: Focus will be on tropical systems, land-margin interfaces, warm-water freshwater systems, marshes, as well as the wide range of ASLO/PSA topics. A variety of special sessions are planned.

Abstract Deadline: January 15, 1994

Contact: Program information: Alina Szmant, ASLO '94 Meeting Co-Chair, University of Miami/RSMAS, 4600 Rickenbacker Causeway, Miami FL 33149 (Tel: 305-361-4609; Fax: 305-361-4600; Omnet: a.szmant; Internet: asmant@rcf.miami).

Registration and logistic information: ASLO/PSA 1994, c/o Jenny Bernal, 15221 SW 80 St. #301, Miami, FL 33193, USA (Tel. and Fax: 305-382-0993).

Society of Photo-Optical Instrumentation Engineers International Conference on Ocean Optics XII

Dates: June 13 - 15, 1994

Location: Bergen, Norway

Topics: Advances in Optical Instrumentation; Bio-Optical Variability; Closure; Coastal Waters I: Bio-optical Processes; Coastal Waters II: Geochemical/Physical Processes; and Remote Sensing and Algorithm Development.

Abstract Deadline: November 1, 1993

Contact: SPIE (Tel: 206-676-3290; Fax: 206-647-1445).

6th International SIL Workshop on Aquatic Microbial Ecology

Dates: June 17 - 23, 1994

Location: Uppsala, Sweden

Topics: Measurement of microbial activities involved in the carbon cycle of aquatic ecosystems, including pelagic processes and sediment-water interactions. Topics should relate to microbial interactions in the water column or surface sediments, or roles of microbes in nutrient cycles and fluxes, and may encompass different levels of organization, from dissolved organic matter and viruses to the organization of food webs. Organizers expect an increased emphasis on the application of new methods, particularly molecular biological, for identifying microbes and assessing microbial diversity. This meeting is co-sponsored by ASLO.

Contact: Russell T. Bell, Institute of Limnology, Uppsala University, Norbyvägen 20, S 752 36 Uppsala, Sweden (Tel: 46-18-18 27 12; Fax: 46-18-53 11 34).

Third Symposium on Biogeochemistry of Wetlands

Dates: June 26 - 29, 1994

Location: Orlando, Florida

Topics: Meeting will emphasize various biogeochemical processes occurring in freshwater and estuarine wetlands. Topics include: role of wetlands in improving water quality; role of wetlands in global climate change; nutrient cycling in wetland ecosystems; use of biogeochemical processes to characterize regulatory wetlands; plant-soil interactions in wetlands; toxic heavy-metal chemistry in wetlands; reactions of toxic organics in wetlands; and modeling of biogeochemical processes.

Contact: Dr. K.R. Reddy, Wetland Biogeochemistry Laboratory, Soil and Water Science Department, University of Florida, Gainesville, FL 32611 (Tel: 904-392-1804; Fax: 904-392-3399).

International Conference on Tropical Limnology

Dates: July 4 - 8, 1994

Location: Salatiga/Central Java, Indonesia

Topics: Commemorating the 65th anniversary of the Ruttner-Thienemann Limnological Sunda Expedition, the meeting will present results on limnology in tropical countries. Objectives are to: Exchange experimental results, methods, research results, observations and ideas on tropical limnology; collect information on limnological trends and activities in tropical countries; and evaluate the possibilities of further cooperation between concerned groups in tropical limnology and tropical wetlands for the benefit of the improvement of the understanding of various interrelated fields in aquatic sciences. Topics include: tropical lake, reservoir, riverine and phytotelmintic limnology; tropical wetland limnology and conservation; and limnological education in tropical countries.

Contact: Faculty of Science and Mathematics, Satya Wacana Christian University, JL. Diponegoro 52-60, Sjalatiga 50711, Indonesia (Fax: 0298-81-81420).

International Conference on Sustaining the Ecological Integrity of Large Floodplain Rivers: Application of Ecological knowledge to River Management

Dates: July 12 - 15, 1994

Location: La Crosse, Wisconsin

Topics: River experts from every continent will address topics concerning the ecology and management of large floodplain rivers. The conference will focus on invited synthesis papers presented in keynote platform sessions, and special contributed poster sessions featuring current ideas and experiences about ecological integrity.

Contact: Ms. Penny Tiedt (registration), University of Wisconsin-La Crosse, Continuing Education, 1725 State St., La Crosse, WI 54601 (Tel: 608-785-6503; Fax: 608-785-6547); or Dr. Kenneth S. Lubinski (program), U.S. Fish and Wildlife Service, Environmental Management Technical Center, 575 Lester Ave., Onalaska, WI 54650 (Tel: 608-783-7550; Fax: 608-783-8058).

**ASLO MEETINGS:
Host Institutions needed for 1995 and beyond
Details on Page 2**

ICES Zooplankton Symposium

Dates: August 15 - 18, 1994

Location: Plymouth, UK

Topics: Meeting will focus on zooplankton production measurement and its role in global ecosystems and biogeochemical cycles. Goals are to stimulate new research directions to test the proposition that zooplankton population dynamics and ocean physics are directly coupled. Themes will include new technologies for rapid at-sea population characterization including production indices, and coupled physical/biological models.

Contact: Roger P. Harris, Plymouth Marine Laboratory, or J.C. Gamble, Sir Alister Hardy Foundation for Ocean Science, Prospect Place, Plymouth PL1 3DH, U.K. (Tel: +44 (0)752-222772; Fax: +44 (0)752-670637; Omnet: PML.UK or J.Gamble.CPR).

13th Symposium, International Society for Diatom Research

Dates: September 1 - 7, 1994

Location: Acquafredda di Maratea (Potenza), Italy

Topics: All aspects of diatom research: morphology, cytology, genetics, reproductive biology, physiology, biochemistry, molecular biology, ecology, biogeography, paleontology, phylogeny and systematics. Oral and poster presentations are solicited on marine as well as freshwater diatoms, living as well as fossil.

Contact: Jean Gilder Congressi snc, 13th Int. Diatom Symposium, via G. Guagliariello 35/E, I-80131 Napoli, Italy (Tel: +39-81-546-3779; Fax: +39-81-546-3781).

ANNOUNCEMENT OF OPPORTUNITIES FOR LAND-MARGIN ECOSYSTEMS RESEARCH (LMER): STUDIES AT THE LAND-SEA INTERFACE

Phillip R. Taylor, OCE, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230 (Tel: (703) 306-1587)

As part of the Ecological Systems and Dynamics science theme of the U.S. Global Change Research Program, the National Science Foundation's (NSF) Divisions of Environmental Biology and Ocean Sciences announces a competition for research on land-margin ecosystems. The LMER program is cooperatively administered by the Biological Oceanography and Long-term Studies Programs at the NSF. In this competition NSF plans to provide support for up to five projects for research on land-margin ecosystems, contingent upon the availability of funds for explicit application to the LMER initiative, and on the merit of submitted research proposals.

Land-margin ecosystems are those at the interface of continental land masses and coastal oceans (including the Laurentian Great Lakes). Estuaries, coastal wetlands, tidal portions of rivers and coastal reefs are examples of land-margin ecosystems.

The goal of LMER is to increase the understanding of: 1) the organization and function of land-margin ecosystems; 2) the linkages between these systems and adjacent terrestrial and marine systems; and (3) the impacts of major natural environmental perturbations in these regions.

The research proposed should emphasize major ecological questions that stress the study of linkages between terrestrial and coastal ecosystems. The work should seek to understand the causes of major ecological and environmental changes that influence land-margin environments, and how the populations, communities and ecosystems of the land-margin environments respond to these changes.

In order to achieve major advances in understanding these land-margin systems, the following elements are encouraged:

- Interdisciplinary research coordinated among investigators working within an ecological system;
- Experimental studies across a range of appropriate spatial and temporal scales;
- Development of conceptual, analytical and numerical models to guide the research and data management activities to facilitate comparisons with research in other systems; and

- Comparative approaches encompassing parallel studies in different ecosystems;

Research sites are to be chosen by the submitting investigators; however, applicants are encouraged (but not required) to consider research sites within existing national research reserve systems. The National Oceanic and Atmospheric Administration (NOAA) supports 21 field laboratory sites throughout the coastal U.S. (including the Great Lakes) as part of the National Estuarine Research Reserve System (NERRS), and 13 National Marine Sanctuary (NMS) sites that are located in a number of diverse marine habitats. Many of these sites have extensive long-term data sets and support facilities. For specific information concerning NOAA's NERRS and NMS sites, please contact Dr. Michael P. Crosby at (301) 713- 3125.

Proposals can request funding for up to a six-year period. Detailed budgets (both annual and summary) should be presented for the total support requested, with proposed funding from NSF not to exceed \$500,000 annually. It is expected from the outset that all projects will seek and document significant extramural funding from sources other than NSF and the home institutions of the investigators. Resultant awards will be made as continuing grants that will require the annual submission of progress reports.

Proposal Information

Proposals and inquiries relating to the LMER Program should be directed to Dr. James T. Callahan, Long-Term Studies Program, Division of Environmental Biology, Rm 635, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230 (Tel: (703) 306-1479; Internet: jcallaha@nsf.gov. or BITNET: jcallaha@nsf). Applicants can also direct questions to me.

The deadline for receipt of proposals is February 1, 1994. Final award decisions should be made by July 1, 1994, and new awards will commence not earlier than September 1, 1994.