

1.0 OPENING

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1.1 Opening Remarks and Administrative Arrangements

1.1.1 Memorials for Scientists Involved with SCOR

Patrick Gentien (Founding Chair of GEOHAB Scientific Steering Committee)

We are sad to communicate that Patrick Gentien (IFREMER-Brest, France) passed away on Sunday 9 May. He had been fighting lung cancer for three months, but still his sudden death caught us all by surprise. Until the very end, he kept in touch with his projects and collaborators and continued work whenever the chemotherapy and accompanying exhaustion gave him a break. He leaves a wife, four children and two grandchildren.

Patrick was a member of ISSHA (International Society for the Study of Harmful Algae) with many friends in the HAB community around the world. He was Chair of the ICES-IOC Working Group on HAB Dynamics (1996-1998), the first Chair of the SCOR-IOC Global Ecology and Oceanography of Harmful Algal Blooms (1999), and French delegate at the IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB). He was a key person in the establishment of links between HAB biologists and physical oceanographers and modellers. Those of us who worked with him had the opportunity to enjoy his sharp and acid sense of humour, his unique sense of criticism, and his always generous attitude to share original ideas and go to the core of scientific problems.



Ken Mann (from Newsletter of Canadian National Committee for SCOR)



Ken Mann passed away in Halifax on January 24th at the age of 86. He was born in Aug., 1923 and spent his childhood and early schooling in Dovercourt, Essex. His education as a teacher was interrupted by service in the Royal Air Force during WWII. Married to Isabel after the War, he earned a B.Sc in 1949, a Ph.D in 1953 from the University of Reading and a D.Sc, awarded by University of London in 1965. In 1967, Ken and Isabel, with their three children, emigrated to Canada, where Ken took up a position at the Bedford Institute of Oceanography. Ken's scientific career at the Bedford Institute of Oceanography and Dalhousie University spanned well over 25 years and he continued to write and publish until quite recently. He was Professor and Chairman of Biology at Dalhousie University from 1972-80 and was

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Director of the Marine Ecology Laboratory at BIO from 1980-87. Over the years, he was a mentor to post-doctoral students, many of whom remained lifelong friends. He published over 170 papers in scientific journals and authored or co-authored a number of books, including *Ecology of Coastal Waters: Implications for Management*, *Fundamentals of Aquatic Ecosystems* with R.S.K. Barnes, and *Dynamics of Marine Ecosystems* with John Lazier. Ken's significant achievements in the Aquatic Sciences and his role as a model for students were recognized in 1994 with a Lifetime Achievement Award by the American Society of Limnology and Oceanography. In 2003, he was presented with the Gulf of Maine Visionary Award by the Council on the Marine Environment for his commitment and leadership as an internationally recognized Marine Ecologist. He was awarded, in 2008, an Honorary Degree by Cape Breton University.

Ken retired from BIO, but not from writing, in 1993. His work has greatly enriched our knowledge of detrital food webs, decomposition processes, kelp bed ecology, fish production, coastal zone management, and energy flow in marine ecosystems. In accepting the Gulf of Maine Visionary Award, he wrote that his career had provided "...a sense of the wonder and beauty of living organisms and a perception that the universe embodies a great wisdom, of which we may now and then catch a glimpse in the form of some regularity, scientific generalization, or even a law." He will be sadly missed.

Comments by Elizabeth Gross, Former Executive Director of SCOR

He was a great marine ecologist and, in addition to his directorship of the Marine Ecology Lab at the Bedford Institute and his chairmanship of the Biology Dept at Dalhousie, he chaired what was, in my view, one of the most successful SCOR WGs in my tenure. It was WG 59 on Mathematical Models in Biological Oceanography, which morphed into WG 73 on Ecological Theory in Relation to Biological Oceanography. For years after it was disbanded we still got frequent requests for the software they developed for network analysis.

Dan Wright (member of SCOR/IAPSO WG 127)
(from <http://www.ebituaries.ca/Ebit.aspx?DaId=145205559>)

On the morning of July 08, 2010 Dr. Daniel Gordon Wright passed away suddenly in his home in Lower Sackville. Dan was a Senior Research Scientist with the Ocean Sciences Division of Fisheries and Ocean Canada at the Bedford Institute of Oceanography (BIO) in Dartmouth. He was also a long time Adjunct Professor in the department of oceanography at Dalhousie University. Dan collaborated with many scientist nationally and internationally and was widely recognized as one of Canada's leading physical oceanographers. He co-authored over 70 papers in international scientific journals and many other reports and communications. His scientific excellence was recognized by the Canadian Meteorological and Oceanographic Society through his receipt of its President's Prize in 1992. Dr. Wright was noted for his generosity in providing advice and help to other scientists and to students and young scientists in particular. As well as

being highly regarded through his work in the scientific community, Dan was a generous person; he was always there to help family and neighbours with work around their homes. He was a loving son, brother, husband, father and grandfather, willing to do anything for the people he loved. Dan was above all else a gentleman and a Scholar. Dan was survived by his wife of 37 years, Donna Wright; and his children, Christa (Geoff Lunn), Dave (Michelle Wright), Nicole (Daniel Perks); his mother, Constance, sister, donna, and brothers, Ted, Sonny and Bob. Dan had five grandchildren whom he loved unconditionally. They will remember him with love through memories and stories. Dan was predeceased by his father, Fred who supported him throughout his life and was so proud of the man he was. In lieu of flowers, donations may be made to CMOS Scholarship Fund, since he was so highly regarded for his support to students and young scientists.



From the members of SCOR/IAPSO WG127

We, Dan's fellow members of SCOR/IAPSO Working Group 127, are hit hard by the very sad news of Dan's passing. This is so ... we are missing the words ... it is just unreal. We mourn the death of a thoroughly decent and simply likeable person and of an outstanding scientist. We will miss the fruitful discussions with Dan, his calm character and his rational and precise thinking. He always used to ask the right questions. We will miss him, as a scientist and as someone to be around.

Dan was central to much of what SCOR/IAPSO WG127 has achieved over the past four years in providing new expressions for all the thermodynamic properties of seawater. He has made his mark on several parts of physical oceanography, and his recent contributions in WG127 will have a lasting impact on

the field. In particular, Dan's clear thinking and probing questions led to clarity in the various meanings of "absolute salinity" of seawater. While we are in shock, one thing is clear, Dan's work will be long remembered.

Our thoughts go out to his family.

From Lawrence Mysak

Dan was an incredibly talented, hard-working and generous scientist. He was without question one of my most outstanding PhD students at UBC (1975-78 -- yes, he finished a PhD in only 3 years after a BSc), who at the time worked on the baroclinic instability of ocean currents. He also proofread and checked the algebra of the LeBlond-Mysak treatise "Waves in the Ocean" (Elsevier 1978). In addition, while visiting me at McGill in 1989-90 on a sabbatical from BIO, he met my Swiss postdoc Thomas Stocker (now a distinguished prof. at Bern) and together they developed the zonally averaged ocean circulation model for the THC that has been widely used in climate, paleoclimate and paleoceanographic studies by scores of scientists world-wide. In

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my own research group at McGill, we wrote over 20 papers which used this ocean model as part of a more general coupled ocean-atmosphere-cryosphere-vegetation climate model of intermediate complexity to study various past, present and future climate phenomena.

With much sadness,

Lawrence

Terry Healy (SCOR Vice President: 1990-1996)



We have not yet been able to find an obituary for Terry Healy.

1.2 Approval of the Agenda (see Tab 0)

The agenda can be rearranged at the meeting to accommodate the schedules of presenters and to add items to it.

1.3 Report of the SCOR President

The SCOR President will present a report at the meeting that describes his activities on behalf of SCOR since the 2009 SCOR Executive Committee Meeting in Beijing.

1.4 Report of SCOR Executive Director

SCOR remains healthy, financially and in terms of the quality of SCOR activities. My major impression as I was preparing the background papers for this meeting is that this has been a very productive year in terms of the output of peer-reviewed papers and other documents from SCOR-related groups. Details are provided in Tab 8, but I think we can be justifiably proud of SCOR's contribution to ocean science through these publications, most of which probably would not have existed without the work of our groups.

Finances—At this time of difficult finances throughout the world, SCOR is maintaining its financial stability, thanks to continued contributions from all SCOR nations and additional contributions from a few. The SCOR Executive Committee and Secretariat staff members also manage SCOR's finances conservatively to ensure our long-term financial sustainability. The dues from all 35 nations that participate in SCOR are used to fund the management of SCOR, the Secretariat, an annual meeting of the Executive Committee, representation at the meetings of other organizations, and some working groups and joint meetings with our partner organizations. Some countries there were unable to pay their dues in previous years have caught up this year.

Special funding is provided for our research projects from agencies and institutions in the United States, France, the United Kingdom, Germany, and Spain, and from co-sponsorship by our international partners: the International Geosphere – Biosphere Program, the Intergovernmental Oceanographic Commission, and the World Climate Research Programme. We appreciate this support, without which we could not maintain international project offices and scientific steering committees that carry out the important work of international ocean research planning and coordination. We need more national partners for these activities, as most of our projects do not have enough funding to carry out all the activities they have planned.

Funding for SCOR working groups comes from SCOR dues, funding from the U.S. National Science Foundation, partner organizations that co-sponsor the groups (current examples include the International Association for the Physical Sciences of the Ocean, the Land-Ocean Interactions in the Coastal Zone project, the InterRidge Project, and the International Marine Aspects of Global Change project). In the past few years, a new national partner has emerged in the funding of working groups: Chinese institutions are now co-funding two SCOR working groups, by supporting all the costs for one meeting of the group in China and by paying for the travel of any Full Members of the groups who are from China.

Finally, SCOR is known in the global ocean science community for its capacity-building activities, beginning with the International Indian Ocean Expedition in the early 1960s. Most of these activities are funded from U.S. sources, with a small amount of funding from SCOR dues also contributing. The SCOR Committee on Capacity Building has a lot of ideas, but needs to identify more national funding to implement new activities. SCOR national committees could be very helpful in identifying new national funding sources for SCOR capacity-building activities.

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The finances for SCOR are divided into two basic categories: (1) discretionary funding and (2) flow-through funding. For financial management and auditing reasons, and to give proper credit to SCOR's sponsors, SCOR does not mingle these funds, but keeps them distinct.

Discretionary funding primarily derives from dues to international SCOR from national SCOR committees, plus some funding from the U.S. National Science Foundation (NSF) for working groups and other activities. Dues are used to pay for operation of the SCOR Secretariat; the annual SCOR meeting; travel of the SCOR President, other Executive Committee members, and the Executive Director to represent SCOR at meetings of our partner organizations; sending SCOR reports to developing countries; and for some working group and other scientific activities. Flow-through funding derives from grants received by SCOR from national funding agencies, international organizations, and private foundations, and these funds are devoted to specific activities.

SCOR received funding from the Alfred P. Sloan Foundation for a workshop on an International Quiet Ocean Experiment, and I submitted a proposal to the U.S. National Science Foundation for support for the Third Symposium on The Ocean in a High-CO₂ World, in 2012. NSF issued a special call for research and workshop proposals related to ocean acidification. We are awaiting news of the results of the proposal.

How can SCOR keep its finances in good shape?

1. Maintain high scientific quality of all of SCOR's activities. SCOR's reputation internationally is built on high-quality work on important issues. Maintaining our good reputation is our first priority.
2. Focus finances, and volunteer and staff efforts, on activities in which SCOR has strengths and avoid spending our limited resources on activities that are not SCOR strengths. At the same time, we need to continue to be responsive to new scientific priorities identified by the international ocean science community.
3. Diversify SCOR's income, particularly new national funding for SCOR activities. We do our best to spend these funds provided by SCOR nations carefully, have the minimum Secretariat staff needed, and utilize volunteer effort much more than do many other international organizations. Still, conduct of our large-scale research projects, working groups, capacity building, and other activities, depend on national contributions beyond dues.
4. The continued scientific achievements and financial health of SCOR depend on continued strong participation by national SCOR committees. Participation of national committees in international SCOR activities contributes significantly to SCOR's effectiveness and its visibility in the nations that participate in SCOR. SCOR needs the assistance of national SCOR committees to develop more flow-through funding from national funding agencies for specific activities.

Membership—We have had contact with people in several countries about their potential membership in SCOR and several people from outside the current SCOR community have registered to attend the meeting in Toulouse. We encourage countries participating in SCOR to increase their membership levels over time, as China-Beijing and Spain have done in recent years.

Publications—The SCOR Web site is the major vehicle for providing up-to-date information about SCOR to the international ocean science community and I make changes to the site several times each week, as I receive new information. The site is checked for “dead links” monthly. I re-designed the SCOR Web site moderately this year.

As mentioned earlier, SCOR activities yielded a many publications in the primary literature and other venues this year, as noted in Tab 8.

Meetings—Between the 2009 and 2010 SCOR annual meetings, 6 SCOR working groups met (WGs 130, 131, 133, 134, 135, 136). The SSCs of GEOHAB, GEOTRACES, GLOBEC, IMBER, and SOLAS also met.

Outreach to Scientists From Developing Nations and Capacity-Building Activities—SCOR promotes the improvement of scientific capacity in developing countries and countries with economies in transition by ensuring that every SCOR working group and other activity includes scientists from such countries. In my opinion, this is SCOR’s most significant approach to capacity building. In 2006, SCOR approved a SCOR Committee on Capacity Building, which draws together the set of individual capacity-building activities of SCOR into a coherent program.

Two SCOR Visiting Scholars, Kurt Hanselmann (Switzerland) and Vadim Mokievsky (Russia), was selected in 2010. Hanselmann will spend a month teaching biological and chemical oceanography at the University of Namibia and Mokievsky will conduct field and lab training on meiobenthos for one month at Annamalai University (India).

A subgroup of the committee will meet for the third time, at the University of Bremen (Germany) in August and will be able to report on its progress and plans at the General Meeting. The meeting in Bremen will bring together representatives from IOC, POGO, START, IAEA, some SCOR projects, and from universities in China, South Africa, and Turkey, to review capacity building approaches currently used and to begin to develop a global strategy for capacity building in ocean science and observations.

Service to International Ocean Research Projects—SCOR helps individual projects in many different ways, including providing funds from the National Science Foundation and other sources, providing travel support for developing country scientists and scientists from countries with economies in transition to special events of the projects, providing IPO-type support at the

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beginning of projects, and providing access to the Conference Manager software for management of open science meetings, SCOR is leasing the GoToMeeting and GoToWebinar software this year, as a test of their usefulness to the projects. SCOR also is in a unique position to help individual projects work together, through the project summits funded by the Sloan Foundation.

Partnerships With Other Organizations—Maintaining existing partnerships and developing new ones depends on SCOR having the ability to commit funding to joint activities and to send representatives to partners' meetings. We have strong partnerships with IAPSO, IGBP, IOC, PICES, POGO, SCAR, and SCOPE. As mentioned earlier, SCOR is developing its role as a catalyst of interactions among large-scale ocean research projects, through regular meetings of the projects and other mechanisms. This year, Bjørn Sundby represented SCOR at the IGBP-SC meeting, and Wolfgang Fennel and Ed Urban represented SCOR at the IOC Executive Council and 2009 PICES annual meeting.

Staffing—Lora Carter, our Financial Assistant, has continued her work on reimbursements and general administrative support (this encompasses more activities than I can list here!). She is assuming greater responsibilities as time passes. Elizabeth Gross continues to handle many different financial aspects of SCOR, including working with our auditor on the annual audit and reimbursements from sponsoring agencies and organizations, and managing our use of the Conference Manager software that we lease. Liz will celebrate her 30th anniversary with SCOR this year.

I continue to manage all SCOR Secretariat activities and oversee the finances of SCOR activities, work on new project development/serve as a part-time Executive Officer for one project (GEOHAB), pursue new funding for SCOR activities, represent SCOR at various meetings, help edit various publications, and work on the SCOR Web site and publications. I was particularly active this year in relation to GEOHAB and GEOTRACES, working with the SCOR Panel on New Technologies for Observing Marine Life, and on our data publication activity with IOC's International Oceanographic Data and Information Exchange (IODE). I was also very active, with my partners from IGBP and IOC, on the beginning of preparations for the 2012 Symposium on The Ocean in a High-CO₂ World. Finally, I helped a great deal in preparing the SCOR History Report No. 1 for publication this year. I will celebrate my 10th anniversary with SCOR this October.

Professional Activities—I co-authored several papers in the past year:

- Lowry, R., E. Urban, and P. Pissierssens. 2009. A new approach to data publication in ocean sciences. *EOS: Transactions of the American Geophysical Union* 90:484.
- Orr, J.C., K. Caldeira, V. Fabry, J.-P. Gattuso, P. Haugan, P. Lehodey, S. Pantoja, H.-O. Pörtner, U. Riebesell, T. Trull, E. Urban, M. Hood, and W. Broadgate. 2009. Research Priorities for Understanding Ocean Acidification: Summary From the Second

- Symposium on the Ocean in a High-CO₂ World. *Oceanography* 22:182-189.
- Zhang, J., D. Gilbert, A. Gooday, L. Levin, W. Naqvi, J. Middelburg, M. Scranton, W. Ekau, A. Pena, B. Dewitte, T. Oguz, P.M.S. Monteiro, E. Urban, N. Rabalais, V. Ittekkot, W.M. Kemp, O. Ulloa, R. Elmgren, E. Escobar-Briones, and A. Van der Plas. 2009. Natural and human-induced hypoxia and consequences for coastal areas: synthesis and future development. *Biogeosciences* 7:1443-1467.
 - Gunn, J., A. Rogers, and E. Urban. 2010. Observation of Ocean Biology on a Global Scale : Is New Technology Required for Bio-GOOS? In *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 1)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison, D.E. & Stammer, D., Eds., ESA Publication WPP-306 (in review).

I serve on two advisory groups:

- Reference Users Group (RUG) of the European Project on Ocean Acidification (EPOCA) – This group has been expanded to advise German and UK national ocean acidification research projects.
- U.S. National Committee for Census of Marine Life working group on “Do Ethics Matter? Addressing Unforeseen Ethical, Legal and Regulatory Implications of New Ocean Science Technology.”

1.5 Appointment of an *ad hoc* Finance Committee

The Executive Committee approved Corina Brussaard (Netherlands), Sinjae Yoo (Korea), and Johan Rodhe (Sweden) to serve on the 2010 Ad Hoc SCOR Finance Committee. The committee was approved in advance so they could receive and review SCOR financial information before the meeting.

1.6 Committee to Review the Disciplinary Balance of SCOR's Activities

The disciplinary balance of SCOR activities will be analyzed after new working groups have been approved, to determine whether any specific instructions need to be given in the request for working group proposals in 2011. Peter Burkill will lead this activity again this year, but a new leader will need to be identified, as Burkill will be rotating off the Executive Committee at the end of the General Meeting.

1.7 2010 Elections for SCOR Officers

The new SCOR officers will begin their terms at the end of the 2010 SCOR General Meeting. The schedule for the election process follows.

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Procedures for the Nomination and Election of SCOR Officers

1. A call for nominations from national committees and affiliated organizations must be issued more than 6 months before the General Meeting. Nominations should include a suggestion of the position for which the candidate is being proposed, and a brief *curriculum vitae*. Candidates proposed must be Nominated Members of SCOR (see Constitution 8a). National committees may propose candidates from their own or any other member country.
2. A Nominating Committee of three SCOR members will be appointed by the Executive Committee meeting prior to each General Meeting at which an election will take place. The Nominating Committee will normally include the Past-President as its Chairperson. The role of the Nominating Committee is to provide an Executive Committee for SCOR that is balanced in terms of disciplinary, geographic, and gender distribution.
3. Nominations will not be accepted later than 4 months before the General Meeting, except as provided for in clause 4.
4. Between 2 and 4 months before the General Meeting, the Nominating Committee, after scrutinizing the nominations received, may seek additional nominations for specific positions through direct consultations with national committees and/or affiliated organizations. This process may be needed in order to maintain the appropriate disciplinary, geographic, and gender balance on the Executive Committee.
5. The Nominating Committee will prepare a final slate of candidates, one per position, and will confirm that the members of this slate are willing to serve.
6. Two months before the General Meeting, the Nominating Committee will announce its proposed slate and send it, along with all nominations received, to all voting members of SCOR as defined in Clause 21 of the SCOR Constitution (Nominated Members and Representative Members of Affiliated Organizations). Nominations received as a result of action taken under clause 4 will be identified.
7. Clause 22 of the SCOR Constitution states that when elections are held "only one Nominated Member from each Committee for Oceanic Research shall have a vote. One Representative Member from each Affiliated Organization may also vote."
8. No further nominations will be allowed after the Nominations Committee has announced its slate of candidates.
9. If three or more national committees do not agree with the proposed slate of the Nominations Committee, they may request that a formal election be held and that all nominations received be included on the ballot. Notice of a request must be received not less than 2 weeks before the start of the General Meeting and the election will be held on the last day of the General Meeting.
10. If no vote is requested, the slate proposed by the Nominating Committee will be declared elected at the end of the General Meeting.

This procedure has been approved by the 24th General Meeting of SCOR (Amsterdam 1998) and may only be modified by a majority decision taken at a General Meeting. The word "gender"

was added to items 2 and 4 at the 2008 General Meeting.