

IMBER Update



Integrated Marine Biogeochemistry and
Ecosystem Research

IMBER is an international project of IGBP and SCOR



Issue No. 1 - December 2005

A note from the chair of IMBER

I take great pleasure in introducing the first issue of IMBER Update.

IMBER Update will be published electronically on a regular basis by the International Project Office to provide a vehicle for informing the science community about the activities and progress of IMBER. The past 12 months have seen several very important milestones in the development of the IMBER project:

- approval of the IMBER Science Plan and Implementation Strategy by our sponsors IGBP and SCOR,
- establishment of our International Project Office
- appointment of two working groups which are focused on developing implementation plans for the core project.

There has also been a significant number of national and regional initiatives developed and in some cases funded which will contribute significantly to the success of IMBER. We invite you to send us information on your IMBER related activities, workshops and conferences for inclusion in IMBER Update.

I invite you to join the IMBER community by participating in, international initiatives and the development of national or regional research activities that will contribute to our understanding of the interactions between biogeochemical cycles and ecosystem and provide a basis for the prediction of the impacts of global change on the marine system.

Julie Hall
Chair IMBER SSC

IPO Opening



From left: Jean-Claude Bodéré, Julie Hall, Elena Fily, Sylvie Roy, Sophie Beauvais, Paul Tréguer.

The official opening of the IMBER International Project Office was held on October 25, 2005 at the Institut Universitaire Européen de la Mer (IUEM) in Brest. Present for the occasion included: the President of Université de Bretagne Occidentale (UBO), Jean-Claude Bodéré, the Director of the Institut Universitaire Européen de la Mer, Paul Tréguer, who also represented the CNRS-INSU Director, Sylvie Jousseau, representative from our sponsors, Wendy Broadgate from IGBP and Ed Urban from SCOR, the SSC Executive members and the IPO staff.

The IMBER International Project Office is now fully operational and is actively starting the coordination of projects and promotion of IMBER activities. The IPO staff includes an Executive Officer, Dr Sylvie Roy (Sylvie.roy@univ-brest.fr), an administrative assistant, Ms Elena Fily (Elena.Fily@univ-brest.fr), and the newly hired Deputy Executive Officer, Dr Sophie Beauvais (Sophie.Beauvais@univ-brest.fr), who joined the IPO last October.

French co-sponsors of the IMBER International Project Office are Institut National des Sciences de l'Univers, a department of Centre National de la Recherche Scientifique, Institut de Recherche pour le Développement, Université de Bretagne Occidentale, Institut Universitaire Européen de la Mer and the Region of Brittany.

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Endorsement of research by the IMBER project

The IMBER Science Plan and Implementation Strategy provides a framework that supports participation of regional, national and individual research efforts in the IMBER project. We invite and encourage the submission of research projects for recognition as IMBER activities.

The benefits for endorsed projects include enhanced scientific value, opportunities for participation in international recognised programmes, strengthening of national funding proposals, and meaningful data sharing (complete list available at <http://www.imber.info>)

International/regional/national research groups can submit their project for recognition by the IMBER Scientific Steering Committee (SSC) via the web site (www.IMBER.info). Projects seeking recognition from multiple IGBP/SCOR projects are welcome, as the SSC recognises that many national/regional activities will potentially contain research objectives relevant to more than one project.

Julie Hall
Chair IMBER SSC

Working groups

To facilitate the implementation of the IMBER project a number of task teams and working groups will be established. To date the End-to-End food web Task Team which is a joint activity with GLOBEC and the joint IMBER SOLAS Working Group have been established.

End-to-End food web Task Team

Evidence is mounting that changes in the structure of marine food webs at all trophic levels have the potential not only to influence the dynamics of key trophic players but as well impact upon the transport and sequestering of carbon via changes in flux dynamics. These food webs can be affected to varying degrees by factors such as short-term environmental variability, long-term climate change, changes in predator prey interactions, introduced species, fishing and pollution. At present, it is difficult to understand direct and indirect controls on food webs across all scales. It is also not clear whether it will be possible to understand the full ramifications and feedbacks caused by natural and anthropogenic perturbations of the marine environment. In an attempt to help focus current and future research on marine end-to-end food webs, a task team has been formed to help define some of the main issues. The task team, a joint activity of IMBER and GLOBEC, is co-chaired by Coleen Moloney (South Africa) and Mike St John (Germany). Other members of the task team are Ken Denman (Canada), Dave Karl (USA), Fritz Köster (Denmark), Svein Sundby (Norway) and Rory Wilson (UK). The team will prepare a manuscript for publication in 2006, which lays out

- (i) why we need to tackle end-to-end food webs in our studies at this time,
- (ii) what the key challenges are and how we can meet them, and
- (iii) how we can make headway in the experimental, observational and modelling components of marine end-to-end food webs.

The task team will meet on 14-15

December 2005 in Hamburg, Germany.

Coleen Moloney, Mike St John
Co-chairs End-to-End Task Team

Joint SOLAS/IMBER Carbon Implementation Group

Recognizing the need for scientific discussion and coordination of marine carbon research within IMBER and SOLAS, the two IGBP programmes decided to establish a joint carbon implementation group. This group officially formed on Sept. 24th during the 7th International CO2 Conference in Broomfield, Colorado/USA bringing together similar initiatives that were developing independently within the two projects. The group, which is co-chaired by Professor Truls Johannessen from the University of Bergen/Norway (SOLAS co-chair) and Professor Arne Körtzinger from the IFM-GEOMAR in Kiel/Germany (IMBER co-chair) works jointly with IOCCP, the International Ocean Carbon Coordination Project. It is commonly understood that IOCCP deals with technical coordination issues that cut across all research programs and that its principle mission is working with the research programs such as IMBER and SOLAS to develop a sustained observing system for research. In contrast, the Joint SOLAS/IMBER C-Group will oversee all scientific aspects of marine carbon research which range from the initiation of new observational programmes to concerted synthesis efforts of the huge international carbon data holdings. The implementation group is currently finalizing a joint carbon

implementation plan. Also as one of the first actions three joint working groups were established:

1. Surface ocean CO₂ fluxes (Chair: Nicolas Metzl, Université Pierre et Marie Curie, Paris/France)
2. Interior ocean carbon storage (Chair: Nicolas Gruber, University of California, Los Angeles, USA)
3. Carbon cycle climate sensitivities and feedbacks (Chair: Kitack Lee, Pohang University, Korea)

New initiatives that are currently being started by these working groups include the development of guidelines and protocols for mesocosm experiments (joint workshop with IOCCP) and a formal approach to include oxygen measurements into the international float observatory of the ARGO programme (white paper to be written in early 2006).

Arne Körtzinger
Co-chair Carbon Working Group

IMBER related conferences, workshops and special sessions

■ **International Conference on the Humboldt Current System: Climate, ocean dynamics, ecosystem processes, and fisheries**, Lima, Peru, 27 Nov - 1 Dec 2006

Abstracts Due: May 15th 2006
Conveners :
Arnaud BERTRAND, IRD /
Renato GUEVARA CARRASCO,
IMARPE / Pierre SOLER, IRD

Further Details:
<http://irdal.ird.fr/hcs-conference.imarpe.fao.ird.php3/>

■ Indian Ocean Biogeochemistry Workshop, Goa, India, October 3-6, 2006

As part of their 40th anniversary celebration, the National Institute of Oceanography in Goa will convene an Indian Ocean Biogeochemistry Workshop on October 3-6, 2006. This workshop will focus on assessing the state of our knowledge of the biogeochemistry of the Indian Ocean. An important goal of this workshop will be to develop a plan to implement a complimentary biogeochemical observation and modeling program in parallel with the planned CLIVAR/GOOS IO observing system. Topics of sessions will include: atmosphere-ocean interactions, physics and climate, planned CLIVAR/GOOS Indian Ocean Observing system, review of our knowledge of the Indian Ocean basin regarding, chlorophyll, primary and secondary production and export flux variability, nutrient cycling and limitation, Fe and trace metal cycling and limitation, carbon cycling and CO₂ exchange, and microbes and DOM cycling.

■ PICES / IMBER session at the PICES XV Annual Meeting Yokohama, Japan, October 13 -21, 2006

Meeting Theme: *Boundary current ecosystems*
Session entitled:
Interactions between biogeochemical cycles and marine food webs in the North Pacific
Conveners: Hiraoki Saito, Angelia Pena and Sinjae Yoo.

■ AGU Ocean Sciences meeting, Honolulu, Hawaii, February 20-24, 2006 <http://www.agu.org/meetings/os06>

OS004: *Analysing the links between present oceanic processes and*

paleo-records (LINKS)
Conveners: Karin Lochte and Marie-Alexandrine Sicre

OS009: *Advances in the Study of Carbon Cycling on Continental Margins*

Conveners: Donald L Rice, Paula S Bontempi, Katja Fennel, Marjorie Friedrichs, Antonio Mannino, and Kathy Tedesco

OS022: *Impact of Natural and Artificial Iron Fertilization on Biogeochemistry*

Conveners: Richard Sanders, Raymond Pollard, Stephane Blain and Bernard Queguiner

OS029: *Connecting Ecosystem Processes With Climate Models: What Is Missing to Complete This Linkage?*

Conveners : Louis Legendre, Corinne Le Quéré

OS031: *The Mesopelagic and Bathypelagic Realms of the Ocean: Microbial Activity and DOM Cycling*
Conveners: Gerhard Herndl and Dennis Hansell

OS032: *Decadal variations in ocean interior circulation and biogeochemistry: Results from the CLIVAR/CO₂ Repeat Hydrography Program*

Conveners: Richard A. Feely and Lynne Talley

OS034: *Observations of Anthropogenic Climate Change in the Oceans and their Implications for Society*

Conveners: Rana A. Fine and Richard Feely

OS045: *Biological, biogeochemical, and physical dynamics and their interactions in the coastal ocean*
Conveners: James M. Pringle, R. Kipp Shearman, Heidi Sosik, Jess Adkins, Nicolas Gruber.

OS048: *Biogeochemistry of Planktonic Phosphorus Cycling: Genes to Geochemical Cycles*
Convener: David Karl

OS049: *Sinking Particle Fluxes in the Twilight Zone*

Conveners: Ken Buesseler, Cindy Lee and Hiroaki Saito

OS086: *The Indian Ocean: Recent Discoveries, Links to Global Climate, Atmosphere-Ocean Interaction and Physical and Biogeochemical Response*

Conveners: Raleigh R. Hood, Julian P. McCreary, Raghu Murtugudde, Jerry Wiggert, and P. N. Vinayachandran

OS088: *Using Trace Elements and Isotopes to Study Open-Ocean Biogeochemistry*

Convener: Philip Boyd, Bill Landing, Chris Measures and Mark Wells

OS106: *Role of Ocean Biota in Carbon Flux*

Conveners: Susanne Neuer and Ricardo Letelier.

■ **EGU General Assembly Meeting, Vienna, Austria, April 2-7, 2006**

(<http://meetings/copernicus.org/egu2006/>)

Deadline for Receipt of Abstracts: 13 January 2006

BG1.08: *Remote sensing in marine biogeochemical studies*

Conveners: Jacqueline Boutin and Dorothee Bakker

BG6.02: *Ocean acidification: chemistry, paleo-analogues, response of organisms and ecosystems, and modelling*

Conveners: Jean-Pierre Gattuso, Joanie Kleypas, Jim Orr and Ulf Riebesell

BG6.04: *Roles of microbes in food-web controls of marine biogeochemical fluxes: New****approaches and paradigms***

Conveners Louis Legendre and Richard B. Rivkin

OS5: *Marine Biogeochemical Cycles*

Conveners: Carol Robinson, Baris Salihoglu

OS7: *Ocean Carbon Source and Sink Assessments*

Conveners: Doug Wallace, Rik Wanninkhof, Dorothee Bakker, and Maria Hood

Meetings

■ The joint IMBER / GLOBEC End-to-End Task Team will meet in Hamburg, Germany, on 14-15th December 2005.

■ The next IMBER SSC meeting will take place in Brest, France, 10-12th May 2006.

National Updates

■ **Chile**
Workshop

Oxygen minimum systems in the ocean: Distribution, diversity and dynamics

Concepción, Chile, October 24-26, 2006

The Faculty of Natural and Oceanographic Sciences, the Department of Oceanography, and the Center for Oceanographic Research in the Eastern Pacific (FONDAP-COPAS) of the University of Concepción, are pleased to announce the Workshop on "Oxygen minimum systems in the ocean: distribution, diversity

and dynamics", as an activity that will coincide with the 2006 SCOR General Meeting.

The workshop intends to cover the following areas of oceanography related to oxygen minimum zones and oxygen deficient waters: physical and chemical oceanography, biogeochemistry, ocean-atmosphere interactions, biology, biodiversity, ecology, paleoceanography, and anthropogenic influences. A total of about 100 participants are expected, including 5-6 international invitees as keynote speakers, 5-6 national and Latin-American researchers with integrative talks, and researchers and students from the region with poster presentations, in particular from Chile, Peru, Ecuador, Central America and Mexico.

More information will be posted soon. The general coordinator is: Dr. Victor Ariel Gallardo, (vagallar@udec.cl; vgallardo@coreocean.org).

Carina Lange

■ **USA**

The long-awaited NSF program announcement on "**Carbon in water systems**" has been posted on the NSF web site. Information on Carbon and Water in the Earth System can be found at: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13651&org=GEO&from=home

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The Science Plan and Implementation Strategy is available on request at imber@univ-brest.fr and is downloadable from the website.

When sending articles for the IMBER update please include photos or figures in as high resolution as possible.