

IMAGES (International Marine Global Change Study)

Marine program of IGBP-PAGES, affiliated to SCOR in 1995)

IMAGES (International Marine Global Change Study) is a core program of Past Global Changes (PAGES), a core project of the International Geosphere-Biosphere Programme (IGBP), and is affiliated with SCOR. IMAGES was initiated to respond to the challenge of understanding the mechanisms and consequences of climatic changes using oceanic sedimentary records. The overriding IMAGES science issue is to quantify climate and chemical variability of the ocean on time scales of oceanic and cryospheric processes; to determine its sensitivity to identified internal and external forcings, and to determine its role in controlling atmospheric CO₂. In order to achieve these scientific objectives, IMAGES coordinates a global program to collect and study marine sediment records to address three fundamental questions:

1. How have changes in surface ocean properties controlled the evolution of global heat transfer through the deep and surface ocean and thereby modified climate?
2. How have changes in ocean circulation, ocean chemistry, and biological activity interacted to generate the observed record of atmospheric pCO₂ over the past 300 kyr?
3. How closely has continental climate linked to ocean surface and deep-water properties?

IMAGES accomplishes these objectives through (1) the planning and coordination of coring cruises to retrieve and exploit in international collaboration giant sediment cores from long, continuous time series in high sedimentation rate areas of the ocean, and (2) the support of symposia, working groups and their workshops.

IMAGES Administration

The program has a permanent office hosted at the University of Bremen in Germany. Our budget covers, in addition to the day-to-day expenses of the office:

- Full-time salary for a data manager.
- Three months of salary per year for an Assistant Director
- Funding or co-funding (with SCOR and PAGES, mainly) of working group meetings, travel support for participation in international conferences and symposia
- Support for training of young scientists (participation to symposia and oceanic cruises)

Chair

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Membership

26 countries with national consortia of university or governmental research institutes as well as represented by a single institute only are members.

B. Opdyke	AUSTRALIA	M.L. Machain-Castillo	MEXICO
T. Pedersen	CANADA	E. Jansen	NORWAY
C. Lange	CHILE	D. Kroon	NETHERLANDS
Z. Jian	CHINA	H. Neil	NEW ZEALAND
K.L. Knudsen	DENMARK	A. Völker	PORTUGAL
F. Grousset	FRANCE	E. Ivanova	RUSSIA
A. Mackensen	GERMANY	J.A. Flores	SPAIN
J. Eriksson	ICELAND	J. Rogers	SOUTH AFRICA
V. Ramaswamy	INDIA	T. Stocker	SWITZERLAND
J. Sopaheluwakan	INDONESIA	M.T. Chen	TAIWAN
F. Florindo	ITALY	N. Kallel	TUNISIA
H. Kawahata	JAPAN	I. Hall	UK
B. Suk	KOREA	B. Flower	USA

Data Archiving and Synthesis

Archiving of IMAGES data, including shipboard and laboratory data has been continued effectively. A new bibliography has been installed on the IMAGES website, which is in service with all recent information concerning our activities (workshops, past and future cruises, database).

Working Groups

IMAGES supports the activity of several IMAGES and SCOR-IMAGES Working Groups (WGs). There are currently seven active WGs, whose main task is to coordinate the acquisition of cores and laboratory data in key areas and to stimulate thematic discussion on specific topics related to paleoenvironmental oceanic conditions. IMAGES has financially supported the first meetings of the new WGs in 2004 and 2005. The active working groups comprise:

PACE: Reconstruction of Past Ocean Circulation (SCOR 123)

LINKS: Present Oceanic Processes and Paleorecords (SCOR 124)

EPILOG: Re-evaluation of the LGM conditions

Southern Ocean

Ice-sheet-Ocean Interaction

Holocene Climate Variability

PEPD: Past Equatorial Pacific Dynamics

New: WG on Indo-Pacific Warm water route

The WGs *PACE* and *LINKS* had their first meetings in 2004 and an international conference on quantitative estimates for past ocean circulation was organized by *PACE* in March 2005 at Georgia Tech University, Atlanta. The core members for both WGs met also at the 2005 AGU Fall meeting in

San Francisco where LINKS organized a special session. PACE had a third meeting in April 2006 at Gif-sur-Yvette, France for final document writing. A special LINKS workshop will be organized in November 2006 at the HANSE Institute for Advanced Studies, Delmenhorst, Germany.

PEPD had a final meeting in December 2005 right after the AGU Fall Meeting including the post-cruise discussions on the IMAGES cruise (Pecten) that was undertaken in June/July 2005 to Indonesian and Australian waters.

A new initiative was started for an IMAGES-PAGES WG addressing the role of the Indo-Pacific warm water route for climate change. This WG held a special session on the Indonesian Throughflow area at the AGU Fall meeting 2005 and a second workshop was held in July 2006 at Kiel University.

A second new IMAGES WG shall be installed by the end of 2006/beginning of 2007 in order to synthesis the paleoceanographic data available for the Iberian Margin and to come up with new targets for paleoclimate research in this area.

Recent activities

New IMAGES Brochure: A new 8-page IMAGES brochure was printed in spring 2006. It presents an overview of the IMAGES goals and achievements over the last decade. The brochure is available from the IMAGES office (<http://www.images-pages.org>) on request.

IGBP-SCOR FTI on Ocean Acidification: Through PAGES the marine Paleoclimate community contributes to the Fast Track Initiative which will hold its first workshop on “Ocean Acidification - modern observations and past experiences” at the LDEO, Palisades, NY, 28-30 September 2006.

Cruises: From May to June 2006 a second CALYPSO coring cruise was executed to the China Sea and to Indonesian waters (Marco Polo II). The next IMAGES cruise is planned for the southern Chile Margin for winter 2006/2007. In addition, several cruise proposals are pending for the Southern Ocean. Further CALYPSO coring proposals in the mid-to low latitudes in the Indian and Pacific oceans, as well as for the Mediterranean Sea and the North Atlantic have been submitted to the European Science Foundation (ESF) Eurocores EuroMARC program. This program aims to support scientific proposals related to IMAGES and IODP coring activities within the next three years.

SCICOM: The next IMAGES Scientific Committee Meeting will take place at the CrownPlaza Hotel, San Francisco, 9-10 December 2006, right before the AGU Fall Meeting,