

## Indian Ocean IODP Workshop in October 2011

An Indian Ocean IODP Workshop is to be held in Goa on 17-18 October, and planning is well underway. The workshop will be hosted by India, and is jointly planned by India and ANZIC. The conference organisers dealing with foreign scientists are Neville Exon of the Australian National University, Dhananjai Pandey of NCAOR, Goa, and Stephen Gallagher of Melbourne University. Many key participants have agreed they will come, but we are now asking other scientists with ideas potential Indian Ocean scientific ocean drilling to consider applying to attend. Numbers will be limited. The aim is to further develop existing proposals and start work on new proposals, which could be considered for drilling from late 2013, assuming that *JOIDES Resolution* will go into the Indian Ocean at the beginning of the next phase of IODP. The latest plans have the *JOIDES Resolution* program for the present phase of IODP ending in the Sea of Japan in late 2013

Because there has been no scientific ocean drilling in the Indian Ocean for nearly a decade, this workshop is vital in building the international scientific alliances that can lead to further strong proposals. Also, India itself has only joined IODP recently and such a workshop will provide wide exposure of the Indian science community to IODP science and IODP capability, leading to better understanding and new IODP proposals. The following four themes have been arranged for the workshop and planning sub-committees have been formed:

1. **Cenozoic oceanography, climate change, gateways and reef development.** This is designed to cover both broad questions related to the Indian Ocean, and more narrow ones such as the causes and effects of the Indonesian Throughflow current and of sea level rise and fall and the origin of late Pleistocene reefs. Sub-committee Chairman is Stephen Gallagher of Melbourne University (sjgall@unimelb.edu.au)
2. **The history of the monsoons.** This will cover tectonics, uplift, weathering and erosion, sediment deposition, and climate and oceanography. It will deal with all Indian Ocean areas affected by monsoons. This will allow discussions/nurturing of proposals emerged since the Detailed Planning Group (DPG) workshop on monsoon in 2008. Sub-Committee Chairman is S. Rajan (rajan@ncaor.org)
3. **Tectonics and volcanism.** There are many questions related to the tectonism of the Indian Ocean, such as plate tectonics, the evolution of the oceanic crust including mid-ocean ridge formation, and the formation of large igneous provinces; continental rifting and related deposition; subduction, arc volcanism and earthquakes. Sub-committee chairman is Mike Coffin (Mike.Coffin@utas.edu.au)
4. **The deep biosphere.** Pioneering studies of the "extremophiles" of the deep biosphere in sediments and basalts have largely been concentrated in the Atlantic and Pacific Oceans. Given the different nature of the oceanography and inputs of organic matter into the Indian Ocean, the deep biota could be rather different there. Sub-committee Chairman is Steve D'Hondt (dhondt@gso.uri.edu)

Note that the 7th International Conference on Asian Marine Geology, which has an IODP session, is taking place in Goa in the previous week, should you wish to attend that meeting.

Should you be interested in attending the workshop there are three steps to take:

- 1) Examine the draft program as set out below

- 2) Contact the conference organisers with an expression of interest setting out briefly what you will bring to the workshop: Neville Exon ([Neville.Exon@anu.edu.au](mailto:Neville.Exon@anu.edu.au)) and Dhananjai Pandey ([dhananjai.dhananjai@gmail.com](mailto:dhananjai.dhananjai@gmail.com))
- 3) Contact your funding agencies for necessary support. American scientists, for example, have a proposal for funding for eight scientists with Ocean Leadership (Application by Steven Clemens – [Steven.Clemens@brown.edu](mailto:Steven.Clemens@brown.edu)). IODP-MI is supporting a number of key participants from member countries and much of its funding has been already allocated. ANZIC is supporting Australian and New Zealand participants.

# Draft Program for Indian Ocean IODP Workshop as of mid July 2011

## Day 1, Sunday 16 October

Evening ice breaker get-together

## Day 2, Monday 17 October

### Morning plenary session (2.5 hours)

9.00-9.30 Inaugural Session

9.30-9.45 Introduction to the new science plan (Arculus)

9.45-10.10 Discussion

**10.10-11.30 Overview of research themes:** keynote speakers (theme chairs) will review each theme and the results of previous ocean drilling in the region (4 x 15 minute presentations plus 5 minutes questions)

11.30-11.50 Break

### 11.50-1.30 **Thematic Breakout session**

Review of existing proposals and their history (10 mins talk/10 mins questions depending on number of proposals)

Lead proponents (or their co-proponent proxy) of existing proposals have been invited to give a presentation. See list below of existing proposals and how they relate to the four themes.

<b>Proposal</b>	<b>Theme</b>	<b>Brief title</b>	<b>Presenter</b>
549 Full 6	<b>Theme 2</b>	Northern Arabian Sea Monsoon	? Lückge, Germany
552 Full3	<b>Theme 2</b>	Bengal Fan	France-Lanord, France
595 Full4	<b>Theme 2</b>	Indus Fan and Murray Ridge	Clift, UK
702 Full	<b>Theme 1</b>	Southern African Climates	?Zahn, Spain
667 Tier 2	<b>Theme 1</b>	NW Australian Shelf Eustasy	Fulthorpe, USA
724 Full	<b>Theme 1</b>	Gulf of Aden Faunal Evolution	?
760 Pre	<b>Theme 1</b>	SW Australia Margin Cretaceous Climate	?Gröcke, UK
776 Full	<b>Theme 1</b>	Arabian Sea Paleoclimate	Pandey, India
778 Full	<b>Theme 1</b>	Tanzania Margin Paleoclimate Transect	Wade, UK
704 Full2	<b>Theme 3</b>	Sumatra Seismogenic Zone	Goldfinger, USA
727 APL	<b>Theme 3</b>	Afar Mantle Plume Dispersion	Shinjo, Japan
701 Pre2	<b>Theme 4</b>	Great Australian Bight Deep Biosphere	?
780 Pre	<b>Theme 4</b>	Rodriguez Triple Junction Microbiology	?Kumagai, Japan

1.30-2.30 Break

### 2.30-4.30 **Thematic breakout session**

#### **Key scientific hypotheses that can be tested by drilling the Indian Ocean**

Members of scientific community will give **short presentations** (10 to 20 mins each plus 10 mins questions) **on possible proposals/ideas** to test key scientific hypotheses by drilling the Indian Ocean. This session will also be used to identify potential proposals that can be nurtured in a later breakout session.

It is anticipated that the majority of the potential participants in this part of the workshop will have previously submitted a short (100 word summary) of possible drilling prospects/ideas. These will be considered by the committee for inclusion in this session.

### **Day 3, Tuesday 18 October**

- 9.00-10.45    **Thematic breakout session**  
**Key scientific hypotheses that can be tested by drilling the Indian Ocean continued....**
- 10.45-11.10    Break
- 11.10-1.00    **Breakout session into thematic subgroups**  
**Nurturing new or existing proposals**  
Each theme group will be split into three or four subgroups (chaired by committee members) to discuss and nurture new prospects identified or pre-existing proposals that can be matured. Each subgroup will generate a proposal plan/discussion document that will be presented to the session chair in a later session.
- 1.00-2.00    Break
- 2.00-3.00    **Breakout session into thematic subgroups**  
**Nurturing new or existing proposals continued.....**
- 3.00-4.00    **Breakout session**  
Each subgroup presents the results of discussions to the session chair for inclusion in the final plenary session.
- 4.00-4.30    Break
- 4.30-5.30    Final Plenary session**  
The Theme Chairs will present a summary of prospective new proposals or revisions of previous proposals.
- 5.30-5.45    Concluding remarks
- Evening:      Small committee convenes to write Workshop Report for EOS and IODP-MI.

### **Day 4, Wednesday 18 October**

Small committee continues to write Workshop Report for EOS and IODP-MI.

### **Themes/Sessions Subcommittees**

#### **1. Cenozoic oceanography, climate change, gateways and reef development.**

Dr. Stephen Gallagher, Scientist, biostratigrapher and micropaleontologist, University of Melbourne, Australia (Chairman)

Dr. Steven Clemens, paleoceanography, Brown University, USA

Dr. Andre Droxler, sea level and reefs, Rice University, USA  
Dr. Divakar Naidu, paleoceanography, National Institute of Oceanography, India  
Dr. Maureen Raymo, paleoceanography, Brown University, USA

## **2. The history of the monsoon**

Dr. S. Rajan, sedimentology, National Centre for Antarctic and Ocean Research, India (Chairman)  
Dr. Peter Clift, Himalayan uplift and monsoon, University of Aberdeen, United Kingdom.  
Prof. Anil K Gupta, Himalayan uplift and monsoon, Wadia Institute of Himalayan Geology, Dehradun, India.  
Dr. R. K Sharma, marine geology, MoES, Delhi, India

## **3. Tectonics and volcanism**

Dr. Mike Coffin, marine geophysics and LIPS, University of Tasmania, Australia (Chairman).  
Dr. Richard Arculus, igneous petrologist, Australian National University, Australia.  
Dr. K. S. Krishna, marine geophysics, NIO, Goa, India  
Dr. Jim Mori, Kyoto University, seismogenic zones, Kyoto University, Japan.  
Prof. Dietmar Mueller, plate tectonicist, University of Sydney, Australia (not attending)  
Dr. Richard Wysoczanski, igneous petrology, NIWA, New Zealand

## **4. The deep biosphere**

Dr Steve D'Hondt, microbiologist and micropaleontologist, University of Rhode Island (Chairman)  
Dr Verena Heuer, microbiologist, MARUM, Germany  
Dr. S. Shivaji, microbiologist, Centre for Cellular and Molecular Biology, Hyderabad, India  
Dr. Ken Takai, microbiologist, JAMSTEC, Japan