

Indian Ocean Science Workshop

September 11-13, 2017 (Scripps Seaside Forum, La Jolla, CA USA)

Workshop objective: The primary outcome of this workshop will be a four-part workshop report that articulates U.S.-led contributions to the international IIOE-2 Science Plan, highlighting new research activities, as well as existing and new observing assets and modeling tools that could motivate U.S. research in the Indian Ocean, prioritizing links to Indian Ocean phenomena and improved process understanding. The report will be co-authored by the workshop steering committee and other workshop participants who contribute to the report. This report will inform and stimulate the development of PI-driven research proposals for submission to funding agencies to support a U.S. contribution to IIOE-2.

MONDAY, SEPTEMBER 11, 2017

8:00-8:30 Breakfast

PLENARY SESSION 1. Indian Ocean Science Overview Presentations (Auditorium)

This plenary session will include a series of presentations by workshop steering committee members and invited speakers that address research themes modified from the international IIOE-2 Science Plan (20 min. presentation + 10 min discussion)

8:30 Introduction to the workshop and IIOE-2: Motivation, international science plan research themes and initiatives, and implementation strategy – *Raleigh Hood (UMCES)*

9:00 Theme 1: Boundary fluxes, upwelling, ecosystem and atmospheric feedbacks – *Amala Mahadevan (WHOI)*

Theme 2: Monsoon dynamics and impacts on biogeochemistry

- **9:30 Monsoon dynamics, onset, variability and change – *Peter Webster (Georgia Tech)***
- **10:00 Monsoon impacts on biogeochemistry – *Raghu Murtugudde (Univ. Maryland)***

10:30-11:00 Break

PLENARY SESSION 1 (cont'd) (Auditorium)

11:00 Theme 3: Ventilation, oxygen and carbon variability and change – *Laure Resplandy (Princeton)*

Theme 4: Geological and deep-ocean biogeochemical processes

- **11:30 Marine geology and geophysics – *Henry Dick (WHOI)***
- **11:50 Hydrothermal vents – *Susan Humphris (WHOI)***
- **12:10 Vent biology/deep biomass – *Karen Lloyd (Univ. Tennessee, Knoxville)***

Each theme presentation will address variability at the relevant time scales (i.e., intra-seasonal, inter-annual, inter-decadal) and, where appropriate, circulation, air-sea interactions, climate change, and predictability.

12:30-13:30 Lunch

PLENARY SESSION 2. Ongoing Activities in the Indian Ocean (Auditorium)

This plenary session will include brief review presentations to highlight ongoing research and observing activities in the Indian Ocean

13:30-15:30 (10 minute presentations + 2 minutes for Q&A)

- **Status and plans for the Indian Ocean Observing System (including existing observing elements Argo/BGC Argo) and RAMA** – *Mike McPhaden (NOAA/PMEL)*
- **Overview of status and plans for research in the subtropical and southwestern Indian Ocean** – *Lisa Beal (RSMAS)*
- **Results, status and plans for recent Bay of Bengal and northwestern Indian Ocean physical oceanographic process studies** – *Eric D’Asaro (APL/UW) and Amit Tandon (UMass/Dartmouth)*
- **Status and plans for the Years of the Maritime Continent Initiative** – *Chidong Zhang (NOAA/PMEL)*
- **Status and plans for GO-SHIP in the Indian Ocean** – *Lynne Talley (SIO)*
- **Status and plans for GEOTRACES in the Indian Ocean** – *Greg Cutter (ODU)*
- **Status and plans for IODP, MG&G, hydrothermal vent research in the Indian Ocean** – *Henry Dick (WHOI)*
- **Status and plans for research related to Indonesian Throughflow** – *Dwi Susanto (Univ. Maryland)*
- **Overview of remote sensing activities in the Indian Ocean** – *Subrahmanyam Bulusu (Univ. South Carolina)*

15:30-15:45 Quick break and leg stretch!

15:45-16:45 **Participant Introductions/Icebreaker**

16:45-18:30 **Poster Session 1 and Welcome Reception** (view poster list/schedule to find your assigned presentation day)

18:30-19:00 **Tribute to J. J. O’Brien** – *Tony Busalacchi (UCAR)*

TUESDAY, SEPTEMBER 12, 2017

8:00-8:30 Breakfast

BREAKOUT SESSIONS

Starting this morning, participants will divide into breakout groups (by research theme) to develop more focused U.S. research plans in the Indian Ocean. **To ensure continuity in the discussions and ideas raised, attendees should remain in the same breakout group throughout the workshop.** Each breakout session will have a different goal. After the breakout sessions, rapporteurs and discussion leaders will summarize their breakout discussions for all meeting attendees (in plenary). Each of these reports will be followed by open plenary discussion to engage broader input on activities proposed in each thematic breakout group.

8:30-10:30 Breakout Session 1. Potential new projects and activities

- Boundary fluxes, upwelling, ecosystem and atmospheric feedbacks (Auditorium)
- Monsoon dynamics (Robert P. Scripps II Room)
- Ventilation, oxygen and carbon variability and change (Edward H. "Ted" Scripps II Room)
- Marine geology and geophysics (Margaret Scripps Buzzelli and Nackey Scripps Loeb Room)

Breakout Session 1 objective: Devise and prioritize potential U.S.-led projects/regions/topics related to the research theme

10:30-11:00 Break

11:00-12:30 Breakout Session 1 Reports (Auditorium) (5-10 minutes each)

- Boundary fluxes, upwelling, ecosystem and atmospheric feedbacks
- Monsoon dynamics
- Ventilation, oxygen and carbon variability and change
- Marine geology and geophysics

12:30-13:30 Lunch

13:15 Group photo (gather in grassy area outside Scripps Forum)

13:30-15:30 Breakout Session 2. Project implementation

- Boundary fluxes, upwelling, ecosystem and atmospheric feedbacks (Auditorium)
- Monsoon dynamics (Robert P. Scripps II Room)
- Ventilation, oxygen and carbon variability and change (Edward H. "Ted" Scripps II Room)
- Marine geology and geophysics (Margaret Scripps Buzzelli and Nackey Scripps Loeb Room)

Breakout Session 2 objective: Discuss technical implementation of potential new projects and associated collaborations (both disciplinary and international)

15:30-17:00 Poster Session 2 (view poster list/schedule to find your assigned presentation day)

Dinner on your own

WEDNESDAY, SEPTEMBER 13, 2017

8:00-8:30 Breakfast

8:30 – 10:00 Breakout Session 2 Reports (Auditorium)

- Boundary fluxes, upwelling, ecosystem and atmospheric feedbacks
- Monsoon dynamics
- Ventilation, oxygen and carbon variability and change
- Marine geology and geophysics

10:00-10:30 Break

10:30-12:30 Breakout Session 3. Funding and leveraging opportunities

- Boundary fluxes, upwelling, ecosystem and atmospheric feedbacks (Auditorium)
- Monsoon dynamics (Robert P. Scripps II Room)
- Ventilation, oxygen and carbon variability and change (Edward H. "Ted" Scripps II Room)
- Marine geology and geophysics (Margaret Scripps Buzzelli and Nackey Scripps Loeb Room)

Breakout Session 3 objective: Identify funding opportunities and existing observational infrastructure that could contribute to the implementation of new projects.

12:30-13:30 Lunch

13:30-15:00 Breakout Session 3 Reports (Auditorium)

- Boundary fluxes, upwelling, ecosystem and atmospheric feedbacks
- Monsoon dynamics
- Ventilation, oxygen and carbon variability and change
- Marine geology and geophysics

15:00 Closing Remarks and Adjourn Workshop

15:15-17:00 Writing and Planning Session (Auditorium)

Workshop steering committee members and interested workshop participants will meet to summarize the results of the workshop and assign follow-up writing tasks. An effort will also be undertaken to identify (from the breakout discussions) potential synergies between breakout groups for planning regional interdisciplinary field studies/activities in different parts of the Indian Ocean basin.