2nd International Indian Ocean Expedition 2015-2020

Newsletter

Volume-2, Issue-3
March, 2018

(A basin-wide research program co-sponsored by IOC-UNESCO, SCOR and IOGOOS)

To advance our understanding of interactions between geologic, oceanic and atmospheric processes that give rise to the complex physical dynamics of the Indian Ocean region, and to determine how those dynamics affect climate, extreme events, marine biogeochemical cycles, ecosystems and human populations.

The Second Meeting of the Steering Committee of IIOE-2 successfully concludes at Jakarta

The second meeting of the Steering Committee (SC) of IIOE-2 co-hosted under the joint auspices of the UNESCO-IOC Perth Programme Office and the Government of Indonesia's Indonesian Institute of Sciences (LIPI) and the Indonesian Agency for Meteorology, Climatology and Geophysics (BMKG), in partnership with IOC, SCOR and IOGOOS, the co-sponsors of IIOE-2, concluded on the 21 March 2018 at the end of three days of deliberations.

Organised as part of an integrated package of aligned meetings of IORP, SIBER, IOCINDIO, IndOOS and IOGOOS-IRF under the banner of the *2018 International Indian Ocean Science Conference* at the picturesque Grand Mercure Kemayoran, Jakarta, the meeting of IIOE-2 was a grand success in terms of both the number of attendees (60 international and 30 Indonesian participants) and the high-level of scientific discussions focused on the Indian Ocean. The delegates comprised the representatives of the co-hosts, the co-Chairs of IIOE-2, the Heads of the two Joint Project Offices at Perth and Hyderabad, the Chairs/co-Chairs of the different Science Themes and Working Groups, the representatives of the various IOC Regional Bodies and the IIOE-2 National Committees, the Principal Investigators of IIOE-2 endorsed projects and the representative of the Early Career Scientists Network. A keynote talk on the "UN Decade of Ocean Science for Sustainable Development 2021-30" by Dr. Vladimir Ryabinin, Executive Secretary, IOC-UNESCO was the highlight of the sessions on Day -1.

The Meeting in progress

The IIOE-2 Ex. Core Group members with the co-hosts from LIPI and BMKG

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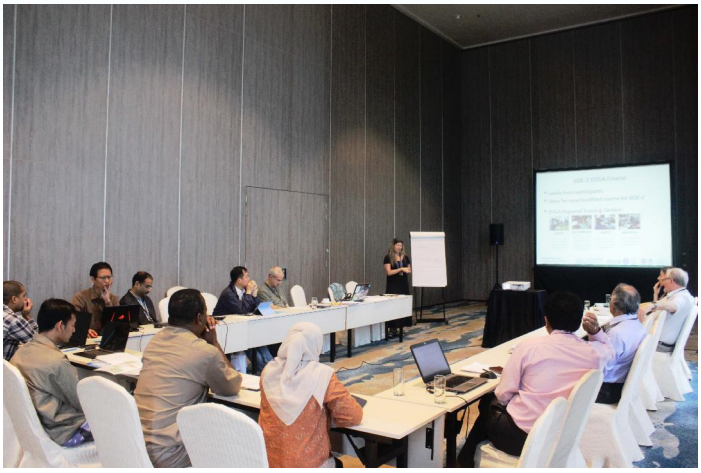
The meeting included presentations of progress reports on the IIOE-2 Science Themes and Working Groups by the respective Chairs/Co-Chairs as well as reports by the Chairs of IOC WESTPAC and IOCINDIO, and by the Chairs/representatives of the National Committees, besides a general status report on the IIOE-2 Early Career Scientists Network. The meeting also focused on addressing such critical questions as whether the IIOE-2 Science Themes, Working Groups, and the IOC Regional Bodies are working optimally and synergistically among themselves, whether the National Committee Programmes and the endorsed projects are optimally integrated into the IIOE-2 Science Plan, and on the future and legacy of IIOE-2 as a global initiative.

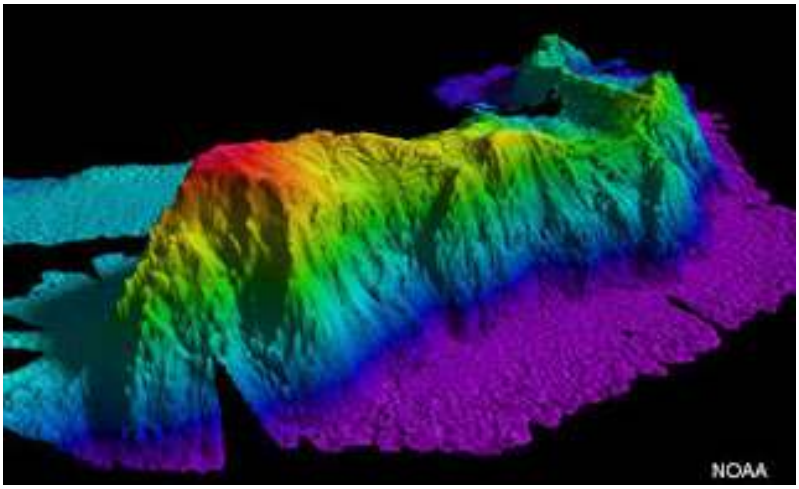
More details of the meeting to be posted soon on the IIOE-2 website *www.iioe-2.incois.gov.in*

A highlight of the Conference was the three-day workshop on IIOE-2 Data & Information Management (D&IM) which followed the meeting of the Steering Committee. Led by Ms. Cynthia L. Chandler, the Co-Chair of the Working Group 2 on Data & Information Management, the workshop focused on identifying and addressing the D&IM issues in the context of the IIOE-2, the core measurements (and associated data types and units) for IIOE-2 scientific activities, and on strategizing the development of a Data & Information Plan as provided in the Implementation Strategy for IIOE-2. The workshop was attended by about 20 participants.



The Global Seamounts Project: Contributions to IIOE-2

The Global Seamounts Project (GSP) endorsed by the IIOE-2 (http://www.iioe-2.incois.gov.in/IIOE-2/EP29.jsp) is an internationally collaborative project developed by Global Oceans, a nonprofit organization in the US, together with a team of international seamount scientists and ecosystem modelers. The project proposes to conduct thirty-six site surveys on eighteen seamount systems, equally divided between seamounts in the Atlantic, Indian and Pacific Oceans, with repeat surveys over a sub-set of project sites to generate temporal resolution of selected project datasets.



The Indian Ocean sites targeted for the project preliminarily include seamounts in the southern Indian Ocean, including along the Southeast Indian Ridge and in the northern Indian Ocean near the Ninety-East Ridge. Final selection of Indian Ocean sites will be made through a Site Selection Working Group process and will be collaborative with other Working Groups.

The GSP proposes to generate several types of datasets that will inform distinct research questions about seamounts. Data from the project will be aggregated and analyzed within a range of scales, from individual seamounts to local, regional, ocean basin, and global scale analyses. Data from the Indian Ocean (twelve surveys on six Indian Ocean seamounts is proposed), and analysis in the context of the dynamics and characteristics unique to the Indian Ocean basin will be contributed to the IIOE-2 as a distinct set of studies and papers.

To enable the intensive series of expeditions within the proposed time frame of a little over three years, the project will utilize the Modular Adaptive Research Vessel (MARV) approach developed by Global Oceans, involving the chartering and configuration of offshore service vessels for scientific research. This strategy also incorporates a new Global

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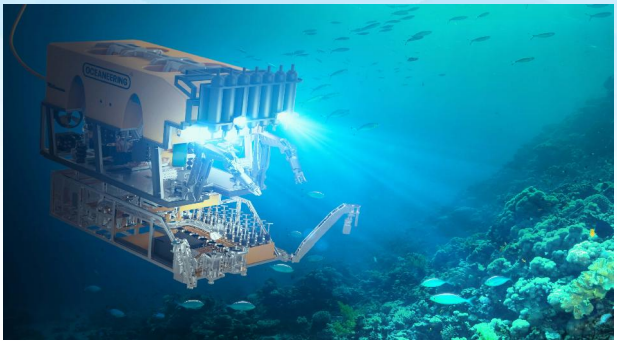
Oceans partnership with Oceaneering, Inc. in the US to design, build and deploy a series of ROV Science Modules that can be operationally integrated with Oceaneering's global pool of over 250 work class ROVs. This will enable an extensive capacity for spatially and functionally precise sampling and documentation of deep sea seamount habitats with ROV technology.

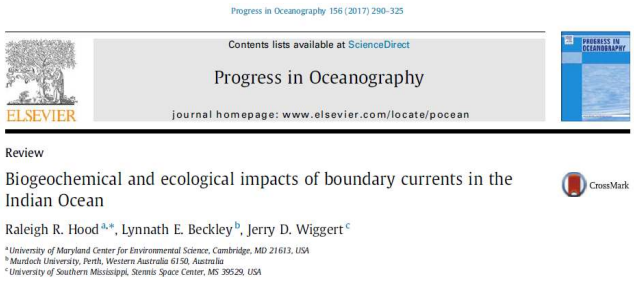
The GSP also proposes to collaborate with another large-scale IIOE-2 project, the Western Indian Ocean Upwelling Research Initiative (WIOURI; http://www.iioe-2.incois.gov.in/IIOE-2/EP04.jsp). The proposed collaboration incorporates the potential for aligning planned regional observations and environmental sampling parameters and data processing standards, and data sharing; as well as the potential for shared research platforms.

[Report Courtesy: Jim Costopulos, Global Oceans, NY; jcostopulos@global-oceans.org]



Global Oceans ROV Science Module linked to an Oceaneering work class ROV, including suction sampler, push cores, D-samplers, bioboxes, and boom arms for auxiliary lighting and cameras. Image copyright Global Oceans, 2018.

Recent Publication



Progress in Oceanography 156 (2017) 290–325

Contents lists available at ScienceDirect

Progress in Oceanography

journal homepage: www.elsevier.com/locate/pocean

Review

Biogeochemical and ecological impacts of boundary currents in the Indian Ocean

Raleigh R. Hood [a,*], Lynnath E. Beckley [b], Jerry D. Wiggert [c]

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We would like to draw your attention to the recent publication of a review paper in Progress in Oceanography by Raleigh R. Hood, Lynnath E. Beckley and Jerry D. Wiggert entitled "Biogeochemical and Ecological Impacts of Boundary Currents in the Indian Ocean" (2017,Vol.156:290-325). This paper provides a comprehensive comparative overview of the physical dynamics of the major boundary currents around the Indian Ocean rim and the biogeochemical and ecological responses that are associated with them.

[Contributed by Prof. Raleigh R. Hood, rhood@umces.edu]

Call for papers-Special IIOE-2 Issue Volume 2 DEEP SEA RESEARCH- PART II

Manuscripts are being solicited for publication in the second volume of a DSR II Special Issue on IIOE-2, edited by Raleigh Hood, Jerry Wiggert, Lynnath Beckley, Jerome Vialard, Sunil Singh and Birgit Gaye.

The target date for submission is **31st May, 2018**

If you are interested in submitting a manuscript or would like more information, please contact Raleigh Hood (rhood@umces.edu).

Endorse your projects in IIOE-2

Don't miss the opportunity to network, collaborate, flesh out your research project and participate in IIOE-2 cruises!!

Over 29 international, multi-disciplinary scientific projects have already been endorsed to date by the IIOE-2. Yours could be the next one!

Visit http://www.iioe-2.incois.gov.in/IIOE-2/EndorsementForm.jsp for further details and for projects already endorsed by IIOE-2.

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Some Upcoming Events

- "The Indian Ocean's past, present and future", Session at the European Geosciences Union (EGU) General Assembly, Vienna, Austria, 08-13 April 2018. http://meetingorganizer.copernicus.org/EGU2018/session/26749
- A Session on "The Eastern Indian ocean Upwelling Research Initiative (EIOURI) and the Second International Indian Ocean Expedition" at the 15th Annual Meeting of the Asia Oceania Geosciences Society, Honolulu, Hawaii, 03-08 June 2018. http://www.asiaoceania.org/aogs2018/public.asp?page=home.htm
- CLIVAR-FIO Joint Summer School on 'Past, Present and Future Sea Level Changes' and the UNESCO/IOC ODC Training Course on 'Ocean Forecast Systems', at Qingdao, China, from June 25 - 30, 2018 and July 2-7, 2018 respectively. http://www.clivar.org or http://www.fio.org.cn/en/training_center/index.htm
- 2018 Gordon Research Conference (GRC) in Marine Microbes 1-6 July, 2018 https://www.grc.org/marine-microbes-conference/2018/ and the affiliated and co-located 2018 Marine Microbes Gordon Research Seminar 30 June-1 July 2018, Lucca, Italy. https://www.grc.org/marine-microbes-grs-conference/2018/
- "Ocean sustainability for the benefit of society: Understanding, challenges, and solutions", 17-21 June 2019, Brest, France. Call for Sessions and Workshops at the Second Open Science Conference of the Integrated Marine Biosphere Research (IMBeR) Project. Proposals should be sent to IMBeR@imr.no by Friday 23 April 2018. http://www.imber.info/en/events/osc--imber-open-science-conference/osc-2019/2019-imber-open-science-conference

Call for Contributions

Informal articles/short notes of general interest to the IIOE-2 community are invited for the next (April-end) issue of the IIOE-2 Newsletter. Contributions referring IIOE-2 endorsed projects, cruises, conferences, workshops, "plain language summary" of published papers focused on the Indian Ocean etc. are welcome. Articles may be up to 500 words in length (Word files) accompanied by suitable figures, photos. (separate.jpg files).

Deadline: **25 April, 2018**

Send your contributions to **iioe-2@incois.gov.in**

The Indian Ocean Bubble-2

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http://www.iioe-2.incois.gov.in/IIOE-2/Bubble.jsp

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IIOE-2 2nd International Indian Ocean Expedition 2015-2020

IOGOOS Global Ocean Observing System for Indian Ocean

UNESCO United Nations Educational, Scientific and Cultural Organization

Intergovernmental Oceanographic Commission

SCOR International Council for Science Scientific Committee on Oceanic Research

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