



2nd International  
Indian Ocean  
Expedition  
2015-2020

# Newsletter

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(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 Third meeting of the IIOE-2 Steering Committee, Nelson Mandela University, Port Elizabeth, South Africa, 11-15 March 2019

The 3<sup>rd</sup> International Indian Ocean Science Conference (IIOSC) was an integrated series of meetings of IIOE-2, Indian Ocean-Global Ocean Observing System (IOGOOS), Indian Ocean Region Panel (IORP), Sustained Indian Ocean Biogeochemistry and Ecosystem Research (SIBER), Indian Ocean Observing System (IndOOS) Decadal Review, IndOOS Resources Forum (IRF) and IOC Regional Committee for the Central Indian Ocean (IOCINDIO). It was held at Nelson Mandela University, Port Elizabeth during 11-15 March 2019 co-hosted by UNESCO IOC Perth Programme Office. Participation comprised more than 100 delegates from 21 countries. The week-long event was again a successful gathering of complementary alliances covering equally complementary topics, and fostering the strengthening of existing and building of new scientific relationships across individuals and institutions. There was the added merit of bringing an international ocean science community into touch with leading scientists and practitioners from the Indian Ocean region.



SOLSTICE Robotics VIP Demonstration, 12 March 2019, Ocean Sciences Campus (OSC), Nelson Mandela University, hosted by Nigel Casey MVO, British High Commissioner to South Africa.



Gliders - at the multi-faceted ocean observations and research facility, Ocean Sciences Campus.

A large group of Second International Indian Ocean Expedition (IIOE-2) Steering Committee constituents came to the WIO region, resulting in the promotion and exposure of the research being undertaken through Western Indian Ocean (WIO). The IIOSC 2019 achieved its standing high-level priority of facilitating the building of new relationships through the vehicle of ocean science. The conference began with special presentations from various African institutes and delegates showcasing the work being carried out in the Western Indian Ocean (such as that through the IIOE-2 endorsed programme known as SOLSTICE). The delegates from various nations were appraised on the enormous amount of work being done in this part of the world ocean. The highlight of these presentations was a coercive effort on the capacity building activities in the region to train younger colleagues. This showcase day (11 March, 2019) ended with an excellent event hosted by the British High Commission (South Africa) at the new Ocean Sciences Campus of Nelson Mandela University, facilitated by Nigel Casey MVO, British High Commissioner to South Africa, Andrew Leach, Nelson Mandela University DVC Research and Mike Roberts, SOLSTICE co-leader.

It was followed by two days of intense deliberations on the progress made since the 2<sup>nd</sup> meeting of the IIOE-2 Steering Committee in Jakarta, during March 2018. The delegates included 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 IIOE-2 Science Themes and Working Groups, representatives of the various IOC Regional Bodies and IIOE-2 National Committees, and Principal Investigators of IIOE-2 endorsed projects. One of the major agenda items was to deliberate on simplifying the current governing structure of the IIOE-2. Prof Burkill presented a prospective simplified governance structure (which had also been circulated to the IIOE-2 community through the last (February) issue of the IIOE-2 Newsletter and the recent issue of "Ocean Bubble"). The delegates discussed the new structure in details and adopted the proposed simplified structure.

Representatives of various national committees also made presentations on planned and upcoming research activities in the Indian Ocean. It was encouraging to note the enthusiasm among the Indian Ocean colleagues to explore the basin using modern instruments and technologies. Finally, another major and profound outcome of the meeting was the unanimous agreement by the Steering Committee that IIOE-2 should continue into the next decade, underscored by the following statement (as per the (current draft) minutes of the meeting):

"Resolution of IIOE-2 Steering Committee, Meeting No 3, 12-13 March 2018: The IIOE-2 International Steering Committee, chaired by representatives of IOC, SCOR and IOGOOS, and comprising a diverse multi-national constituency, agreed to continue the mission of the IIOE-2 out to at least 2025, in order to build on the significant scientific achievements of IIOE-2 to date, the extension that will occur of many current and imminent major IIOE-2 research initiatives into the next decade, the expected emergence of many new major scientific initiatives well into the next decade strongly aligning with the IIOE-2 Science Plan, and in light of IIOE-2's clear alignment, relevancy and potential to make an important and substantive contribution to the UN Decade of Ocean Science for Sustainable Development 2021-30."

[Report Courtesy: Satya Prakash, IIOE-2 JPO India and Nick D'Adamo, IIOE-2 JPO Australia]

## Deep Madagascar Basin (DMB) Experiment: A Quest to Find the Abyssal Water Pathways in the Southwest Indian Ocean

This new project endorsed by IIOE-2 ( <https://iioe-2.incois.gov.in/IIOE-2/EP34.jsp> ) aims to investigate the circulation of the abyssal water entering the deep Madagascar Basin (DMB) through the fracture zones in the Southwest Indian Ridge (SWIR) and how this water is modified inside the basin. These subjects are fundamental to understanding the Indian Ocean meridional overturning circulation that regulates the transport of heat and other properties on decadal to multidecadal timescales in the Indian Ocean.

The proposed work is composed of a field experiment in which deep SOLO and RAFOS floats will be deployed for the first time in the region to trace the abyssal circulation. The float program will be complemented by hydrography and tracer observations. These in situ data will be paired with a state-of-art modeling component which will be used to investigate the underlying dynamics and time evolution of the deep flow field.

The motivation of this proposal came from some recent observations from the 2018 I07N GO-SHIP cruise in the western Indian Ocean that revealed a surprising increase in chlorofluorocarbon concentration in the DMB abyss. This implies that the DMB abyssal water has been replenished between 1995 and 2018, and may indicate changes in the strength of deep Indian Ocean Meridional Overturning Circulation. Moreover, contrary to the global tendency, in recent decades the DMB abyss has been cooling, by unknown causes. The proposed fieldwork will be a U.S. contribution to the 2nd International Indian Ocean Expedition (IIOE-2).

The project will support two undergraduate students that will be selected to participate in the DMB cruise. The cruise in 2020 will be available to the Indian Ocean community for piggy-back projects, and we will also make the sound source array available to the broader community for use (they will be active until the end of 2024). If funded by the National Science Foundation, the project will be active from October 2019 to October 2023.

[Report Courtesy: Viviane Menezes, WHOI, USA]

## Join the MARine Research Information NEtwork on Biodiversity (MARINE-B)

The International Association for Biological Oceanography (IABO) would like to invite the Indian Ocean marine science community to subscribe to the MARine Research Information NEtwork on Biodiversity (MARINE-B) email list. MARINE-B is a community of practice of more than 1000 subscribers around the world to share information on career opportunities (studies, scholarships, jobs, internships, etc.) related to marine biology and biological oceanography.

The goal of IABO is to promote the advancement of knowledge of life in the ocean and facilitating interdisciplinary scientific research. More specifically, the main objectives of IABO are to:

- ☞ Promote the study of marine biology, biological oceanography and other related sciences
- ☞ Promote interdisciplinary communication between marine biologists and other ocean stakeholders by organizing and supporting international forums
- ☞ Encourage international networking and collaboration between organizations and individuals with similar aims and interests
- ☞ Recognize and award outstanding accomplishments in marine biodiversity science

IABO was founded in 1964 and is one of the scientific members of the International Union of Biological Sciences (IUBS: <http://iubs.org/>) under the umbrella of the International Science Council (ISC: <https://council.science/>). IABO also works with the Scientific Committee for Oceanic Research (SCOR: <http://www.scor-int.org>).

To join send message "SUBSCRIBE MARINE-B firstname surname" to [listserv@listserv.heatnet.ie](mailto:listserv@listserv.heatnet.ie) (to leave say UNSUBSCRIBE). Omit your signature and anything else you may normally add. You will get an automated response. Attachments are not allowed to prevent virus transmission.

For any questions, please email IABO President, Patricia Miloslavich ([pmilos@usb.ve](mailto:pmilos@usb.ve)).

[Report Courtesy: Patricia Miloslavich, SCOR representative – University of Tasmania (Australia) and Universidad Simón Bolívar (Venezuela)]



IABO also looks at coastal biological processes. Here, scientists are measuring the temperature of a rocky intertidal shore using biomimicking ("Robo-limpet") temperature loggers (EnvLogger System). Data is captured with an app and can be shared immediately through your mobile phone.

## Early announcement: International Indian Ocean Science Conference-2020 (IIOSC-2020)

The "International Indian Ocean Science Conference 2020 (IIOSC-2020)" sponsored by Ministry of Earth Sciences (MoES), Govt. of India, will be held during 16-20 March 2020 at Goa India co-hosted by National Institute of Oceanography (NIO) Goa, National Centre for Polar Ocean Research (NCPOR) Goa, Goa University and Indian National Centre for Ocean Information Services (INCOIS) Hyderabad, India. The conference aims at assessing the progress and scientific knowledge gained during the last 4 years of IIOE-2 (during 2016-2020). It is also an opportunity for scientists working on different facets of the Indian Ocean to present their ideas and discuss the outstanding issues, identify the knowledge gaps and plan a way forward to address such issues.

Scientists and colleagues who are interested in the Indian Ocean may kindly take note of this and freeze their dates for the conference. A detailed announcement will be available for distribution soon.

## 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!!

The endorsement of your scientific proposal or a scientific activity focusing on the Indian Ocean region is a recognition of the proposal's or activity's alignment with the mission and objectives of IIOE-2, of its potential for contributing to an increased multi-disciplinary understanding of the dynamics of the Indian Ocean, and of its contribution to the achievement of societal objectives within the Indian Ocean region. Over 34 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.

## Some Upcoming Events

- ☞ SOLAS Open Science Conference during 21-25 April 2019, at Hokkaido University Conference Hall, Sapporo, Japan.  
<https://www.confmanager.com/main.cfm?cid=2778>
- ☞ "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.  
<http://www.imber.info/en/events/osc--imber-open-science-conference/osc-2019/2019-imber-open-science-conference>
- ☞ 14<sup>th</sup> International Conference on Copepoda (ICOC) during 14-19 June 2020, at Kruger Park, South Africa.  
[http://abevents.co.za/WEB\\_ICOC2020/index.html](http://abevents.co.za/WEB_ICOC2020/index.html)

## CLIVAR March 2019 Bulletin is available online



The International CLIVAR Project Office distributes a monthly bulletin with announcements, funding opportunities, meeting notifications relevant to the ocean/climate science community.

The latest CLIVAR Bulletin March, 2019 is available at:  
<https://mailchi.mp/clivar.org/clivar-bulletinmarch-2019?e=0e7979fd09>

## 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, 2019**

The IIOE-2 Newsletter is published online by:



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



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