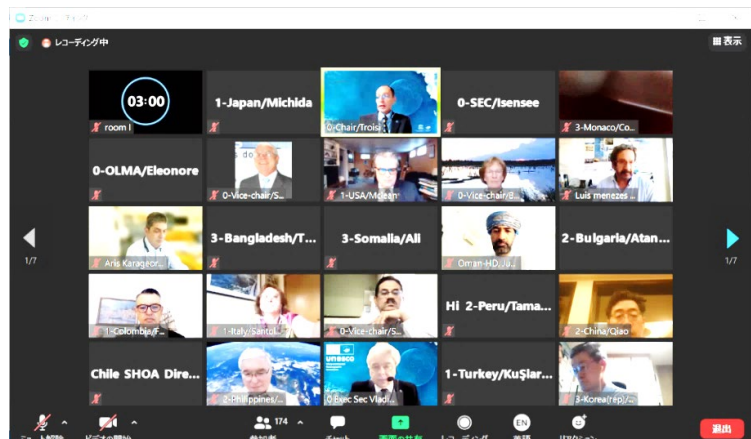


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Recent activities related to the Intergovernmental Oceanographic Commission (IOC)

Yutaka Michida
Professor, Center for International Collaboration

The 53rd Session of the Executive Council of the Intergovernmental Oceanographic Commission (IOC), originally scheduled for June 2020, was rescheduled and held online from February 3 to 9, 2021 because of the global COVID-19 pandemic. Professor Yutaka Michida, Director of the Center for International Collaboration (CIC) of AORI, participated as head of the Japanese delegation. Two other faculty members, Professor Hiroaki Saito and Professor Mitsutaku Makino, also attended the meeting as delegation members. Professor Saito joined the online meeting of the Intersessional Financial Advisory Group on February 2, as the representative from Japan. The 53rd Session of the Executive Council was organized with daily three-hours sessions between 13.00 and 16.00 Paris Time, or 21.00 to 24.00 in Japan, and with an agenda limited to essential issues requiring guidance or decisions prior to the 31st Session of the IOC Assembly to be held in June 2021. The Executive Council adopted two resolutions including “Implementation of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030)” and “Governance, Programming, and Budgeting Matters of the Commission”. For the first resolution, the Member States of the Council agreed on structural arrangements to effectively implement the UN Decade of Ocean Science, in response to the resolution at the United Nations General Assembly in December 2020 (A/RES/75/239) that welcomed the steps taken by IOC, to prepare for the Decade Implementation Plan (DIP) and took note with appreciation of the DIP. The latter resolution contained a set of proposals for modifications to the Rules of Procedure of the IOC, to meet the requirements in organizing online sessions of governing bodies.



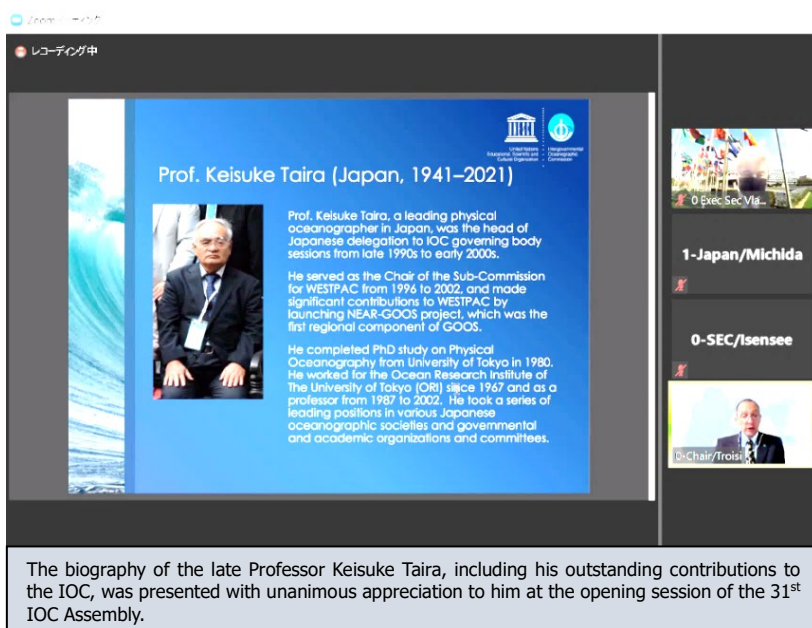
Online opening of the 31st Session of the IOC Assembly on June 14, 2021. Capt. Ariel Hernan Troici (the 3rd column on the top row), the Chairperson of the Commission, was giving an opening statement to the Assembly

The 31st Session of the IOC Assembly was also held online, from June 14 to 25, 2021. The Japanese delegation headed by Prof. Michida was similar to the delegation composed for the 53rd Executive Council in February 2021 and included 24 experts and governmental officials. The Assembly approved 22 decisions on the Commission’s programmatic and administrative issues and 2 resolutions on ‘Implementation of the United Nations Decade of Ocean Science for Sustainable Development (2021-2030)’ (IOC Resolution A-31/1) and ‘Governance, programming and budgeting matters of the Commission’ (IOC Resolution A-31/2). Prof. Michida was appointed as the Chairperson of the Resolutions Committee, one of the statutory sessional committees, to examine the structure and texts of draft resolutions duly submitted by the deadline and to report them to the plenary session of the Assembly for consideration and adoption.

The Assembly decided to establish the Decade Coordination Unit within the IOC Secretariat and the Decade Advisory Board, composed of 20 international experts, for better and effective coordination and implementation of the UN Decade of Ocean Science through the IOC Resolution A-31/1. The Assembly also decided to establish the IOC intersessional working group on the Revision of the IOC Oceanographic Data Exchange Policy (IWG-DATAPOLICY) as a part of the decision on the International Oceanographic Data and Information Exchange (IODE) (IOC Decision A-31/3.2.4) to consider possible revisions of the Policy noting that partner organizations, including the World Meteorological Organization, were changing their data policy and that there have been recent developments in the principles of data sharing and licensing. The Assembly discussed the status of the Regional Committee of the Central Indian Ocean (IOCINDIO) based on the proposal made by the Committee to upgrade its status to an IOC Sub-Commission. It was decided to pursue towards the establishment of the IOC Sub-Commission for the Indian Ocean at the 32nd Session of the Assembly to be held in 2023, taking well into account discussions during the present Assembly in which a wide range of views were presented by Member States, and to undertake remaining steps by an intersessional working group on this issue.

Japan was re-elected as a member of the Executive Council, occupying one of the nine seats for the Electoral Group 4 (Asia-Pacific) for the next intersessional period. It should be noted that the USA has returned to the board of the Executive Council as a result of the election of Executive Council members, after its absence for the last two intersessional periods.

At the opening session of the Assembly, the Chair of the Commission asked the participants to hold a minute of silence to honor distinguished individuals who provided significant contributions to the work of Commission and passed away during the intersessional period. The late Prof. Keisuke Taira, the former Director of Atmosphere and Ocean Research Institute (previously Ocean Research Institute) and the head of the Japanese delegation to a series of governing body meetings of the Commission, passed away in March 2021 and was one of these individuals.



Progress related to the implementation of the United Nations Decade of Ocean Science for Sustainable Development

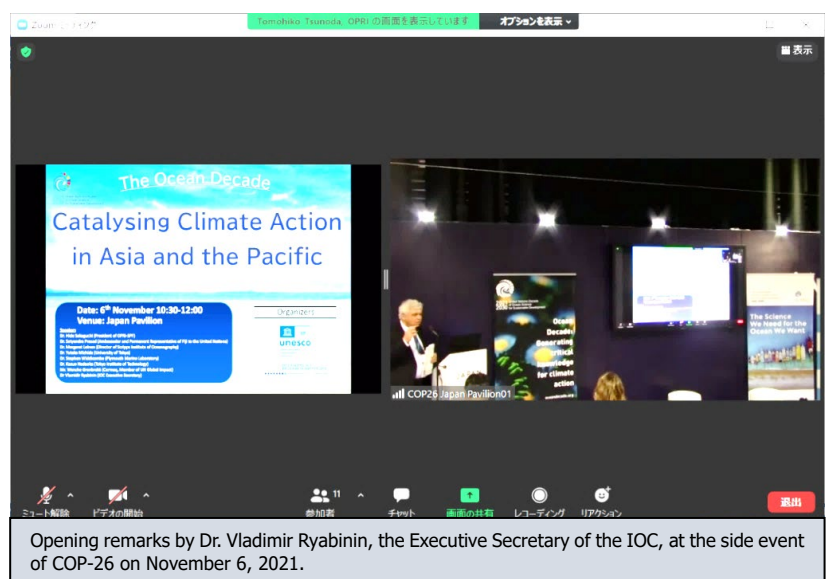
Yutaka Michida

Professor, Center for International Collaboration

The UN's Decade of Ocean Science for Sustainable Development (2021-2030) ('the Decade' hereafter) commenced on Jan. 1, 2021. The IOC has been leading its preparatory phase based on the Resolution (72/73) at the 2017 UN General Assembly (UNGA) and submitted the Implementation Plan of the Decade to the UNGA in 2020 for adoption. All faculty members of the CIC are actively contributing to Japan's national planning and implementation of the Decade by playing leading roles, for example, in the establishment of a Japanese National Committee for the Decade in consultation with related ministries of the Japanese government. The Japan Society of Ocean Policy (JSOP) and Sasakawa Peace Foundation jointly take the role of the Secretariat of the Japanese National Committee for the Decade. The Committee was officially established on February 25, 2021 and had held three meetings by the end of 2021, to share the current status of national contributions to the Decade and to discuss ways in which these contributions could be enhanced in the future. Prof. Michida has been deeply involved in these activities as the vice President of JSOP.

All faculty members of the CIC actively participated in and contributed to several national and international activities to promote the Decade from both scientific research and political viewpoints. Prof. Michida gave an invited talk entitled 'The present status of UN Decade of Ocean Science for Sustainable Development' at an organized session 'Advancing SDGs through inclusive partnerships' at the 2021 JpGU (Japan Geoscience Union) meeting on June 4, 2021. In this talk, he suggested ways to further engage the geoscience research community in the Decade. On November 6, 2021, he made a presentation on the promotion of the Decade at COP-26 (Climate Change Conference), as an invited speaker at a side event co-organized by the Sasakawa Peace Foundation and the IOC. He was also invited to present a lecture to the International Symposium of Ocean Education on 'The Role of Ocean Education for Sustainable Earth', convened by the Center for Ocean Education and Literacy, The University of Tokyo and Nippon Foundation on December 5, 2021. His talk focused on contributions of ocean education to the Decade, particularly to a societal outcome of the Decade 'An inspiring and engaging ocean'.

In the field of national ocean policy, Prof. Michida moderated a panel discussion regarding the promotion of Marine Spatial Planning (MSP) in Japan at the 2nd Symposium of the Marine Technology Forum on December 20, 2021. Prof. Makino of CIC also participated in the panel. Prof. Michida published an article entitled 'Suggestions for Future Enhanced Oceanographic Data and Information Management in Implementing the UN Decade of Ocean Science for Sustainable Development' in Volume 11 of the Journal of Japan Society of Ocean Policy. This article described possible challenges related to oceanographic data and information management as a fundamental component for implementation of the Decade and suggested necessary measures to be taken during the period of the Decade.

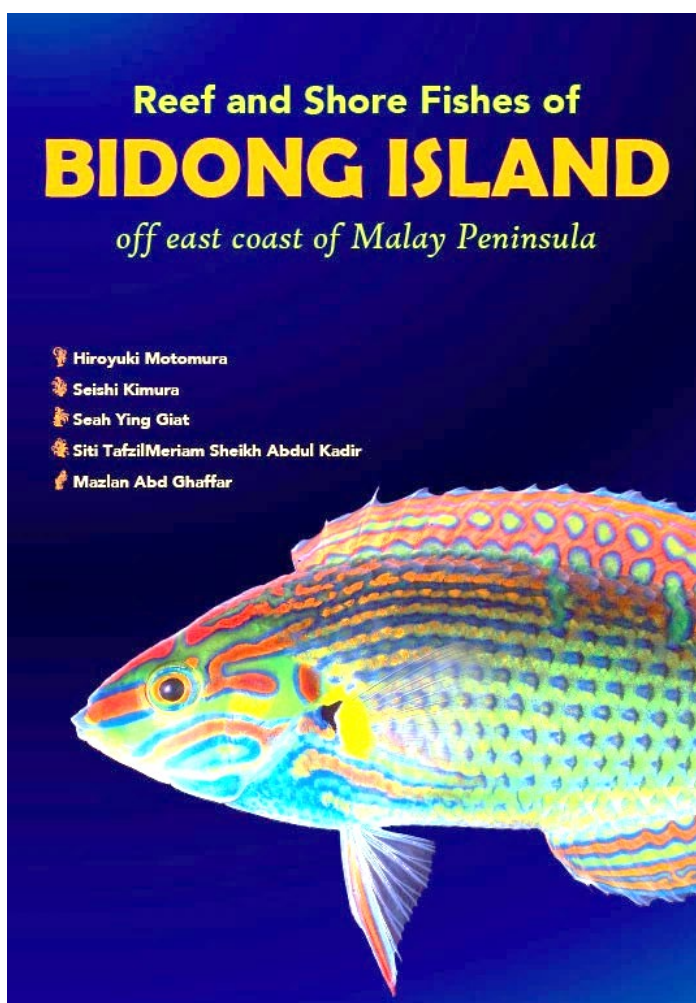


Scientific collaboration with Asian countries

Hiroaki Saito

Professor, Center for International Collaboration

The Collaborative Research and Education Project in Southeast Asia for Sustainable Use of Marine Ecosystems (CREPSUM) is a joint project between Japan and Southeast Asian countries (Indonesia, Malaysia, Thailand, Philippines, and Vietnam) funded by the Japan Society for the Promotion of Science (JSPS). The goals of the project are to: 1) establish an international science and educational network for the Southeast Asian marine ecosystem, 2) progress marine ecosystem studies on emergent issues for conservation and sustainable use of marine ecosystem services in Southeast Asia, and 3) contribute to the UN Decade of Ocean Sciences and UN SDG 14 “*Life below water*” by compiling the best scientific knowledge. The project was developed based on a human network established during past JSPS international collaborative projects, and the AORI has played a leading role in this collaboration over the past 20 years. The CREPSUM started in April 2020, unfortunately coinciding with the worldwide spread of COVID-19. In 2020 and 2021, all the planned field studies were cancelled or postponed, and the implementation of the project was seriously affected by the pandemic. In this difficult situation, member scientists used the time spent at home during lockdown as an opportunity to summarize previous research, resulting in the publication of three field guides (*Jellyfish of Western Pacific*; *Mollusks of Panay, Philippines*; and *Reef and Shore Fishes of Bidong Island off east coast of Malay Peninsula*) and various review articles (e.g., seagrass meadows, mussel biology). Online symposiums/meetings are another type of outreach/educational activity, in which knowledge and experience can be shared with young scientists or the general public. An online workshop on jellyfish biology is planned for March 2022. In this workshop, high-quality images from the microscope will be shared for the identification of jellyfish and to investigate the function of their appendages. It is still difficult to realize “real” field studies and face-to-face discussions due to travel regulations, and CREPSUM scientists are seeking ways to conduct collaborative studies of marine ecosystems in Southeast Asia under strong anthropogenic pressures, because ecosystem services are essential for food supply and human well-being in the region. More details of the publications and symposiums/meetings of CREPSUM are available on the website (<https://jpscrepsum.wixsite.com/mysite>).



Reef and Shore Fishes of Bidong Island off east coast of Malay Peninsula. Motomura, H., S. Kimura, Y. G. Seah, S. T. Sheikh Abdul Kadir, and M. A. Ghaffar (eds). 2021. ISBN 978-4-905464-19-8

PICES-2021 Virtual Annual Meeting

Mitsutaku Makino

Professor, Center for International Collaboration

The North Pacific Marine Science Organization (PICES) held its 2021 annual meeting from Oct 18 to 29. As in the previous year, it was organized as an online virtual meeting, with 50 oral presentations in 7 sessions, 3 workshops, and 11 poster sessions. The 656 participants were from 31 countries, including six member countries of the PICES Convention (Canada, China, Japan, Korea, Russia, and the USA).

At the opening ceremony, the PICES Chair Award, which is given for sustained contribution to PICES, was awarded to Dr. Laura Richards (Canada, PICES Chair for 2012-2016). The Wooster Award, which is named in honor of Professor Warren S. Wooster and given to a scientist with sustained excellence in research, teaching, administration, or a combination of the three in the field of North Pacific marine science, was given to Dr. Sinjae Yoo (Korea, PICES Science Board Chair for 2010-2013). For a distinguished Early Career Scientist, the Zhu-Peterson Award was awarded to Dr. Erin Satterthwaite (USA). Finally, the recipient of the PICES Ocean Monitoring Service Award (POMA) for this year was the Ecosystems and Fisheries-Oceanography Coordinated Investigations (EcoFOCI) program of the NOAA.



Dr. Laura Richards,
PICES Chair Award 2021 Recipient



Dr. Sinjae Yoo,
PICES Wooster Award 2021 Recipient

The Science Board Symposium was held on October 25 in the Canadian west coast time zone, with the theme of “Towards a shared vision of sustainable marine ecosystems”. With a strong emphasis on the United Nations Decade of Ocean Science for Sustainable Development (UNDOS), research results were presented, including a historical analysis of PICES scientific activities, the activities of Early Career Ocean Professionals (ECOPs) in the Pacific, and the NPAFC/PICES program (known as Basin-scale Events to Coastal Impacts (BECI).) Active discussions were held online among the various participants. In other sessions, wide-ranging topics were presented and discussed, such as global warming patterns, ocean energetics, atmospheric nutrient deposition, ocean deoxygenation, extreme ocean events, environmental indicators, and artificial intelligence.

In 2022, the Annual Meeting is scheduled to be held in Busan, Korea from September 23 to October 2, 2022. The overall theme of this meeting is “Sustainability of ecosystems through global knowledge networks during the UN Decade of Ocean Science”. The 2023 Annual Meeting will be a joint annual meeting between PICES and ICES (the International Council for the Exploration of the Sea, the Atlantic Counterpart to PICES), the very first joint meeting in the histories of these organizations. This meeting will focus on how PICES and ICES, the two largest international marine science organizations in the Pacific and Atlantic, respectively, can contribute to UNDOS and conduct marine science with international collaboration for “the ocean we want.”

Renewal of the MoU on Academic Collaboration between AORI and SIO

Hiroaki Saito

Professor, Center for International Collaboration

The Pacific Ocean is the largest ocean on the planet and facilitates many important aspects of heat storage, biogeochemical cycles, and ecosystem services. However, the large body of the Pacific Ocean makes comprehensive observation and understanding difficult. The Pacific Ocean is too large to be studied by one country, and international collaboration is therefore essential. Collaborating with leading marine institutions around the Pacific Ocean is a key strategy of the AORI to understand the Pacific Ocean. The AORI exchanges MoU with institutions around the Pacific, including the National Taiwan University, National Taiwan Ocean University, The Australian National University, University of Hawai'i at Mānoa, and the College of Environmental and Marine Science and Technology, Pukyong National University. Scripps Institute of Oceanography (SIO) of the University of California, San Diego, is one of the oldest marine science institutes (established in 1903) located on the east coast of the Pacific and has been a leading organization in the field of marine sciences. As a leading marine science organization on the west coast of the Pacific Ocean, the AORI has had an MoU of scientific collaboration with SIO since 1988. As part of this collaboration, we have conducted joint scientific activities, joint meetings, and exchanged scientists. Several faculties of the AORI are alumni of SIO. Both institutions recognize that further collaboration is essential to understanding the physical, chemical, geological, and biological processes of the Pacific Ocean and the earth system, and the MoU was therefore renewed on June 17, 2021. Because of the COVID-19 pandemic, we were unable to have a real signing ceremony, as we had for past renewals, but the document was signed and exchanged by the directors Prof. Tomohiko Kawamura of the AORI and Prof. Margaret Linen of SIO. The MoU sets out plans for cooperative field and modeling studies, as well as the exchange of scientists and students. At present, Prof. James Leichter of SIO is visiting the AORI to study the coastal ecology of coral reefs. We are looking forward to exchanges of scientists and joint scientific activities after the relaxation of COVID-19 pandemic restrictions.

Update of the MoU with Bjerknes Centre for Climate Research

Hiroyasu Hasumi
Professor, Climate System Research Division

The Bjerknes Center for Climate Research (BCCR) is the largest center for climate research in Scandinavia. The BCCR is a collaboration between four institutes in Norway, and the University of Bergen is at its core. It was named after Vilhelm Bjerknes, who pioneered the field of weather forecasting. Climate modeling and contributions to IPCC are important foci of the BCCR, so AORI has much in common with the BCCR. Since the first MoU between BCCR and AORI was signed in May 2015, research exchanges have been conducted continuously. Small workshops (around 10 participants) have been conducted about once a year, both at BCCR and AORI, while three relatively large workshops (20-50 participants with people from beyond BCCR and AORI) were held in Japan (one of them was held at the Norwegian Embassy in Tokyo). Additionally, a winter school for young scientists was conducted in Bergen. Wide-ranging topics have been discussed, such as cyclones, polar air-sea interaction, paleoclimate, and climate model development. This MoU was utilized to obtain funding in Norway, under the INTPART (International Partnerships for Excellent Education, Research and Innovation) program of the Research Council of Norway, which significantly helped our activities in terms of travel and meeting expenses. We have obtained good outcomes from these exchanges, such as co-authored papers, joint session proposals at major international conferences, and various collaborative activities. The outbreak of COVID-19 has prevented us from directly exchanging people for the past two years, which has lowered our collaborative activities. Exchanges are being resumed online, and we expect that direct exchanges will also be resumed shortly. To further extend the collaboration between BCCR and AORI, and to foster young scientists in the field of climate sciences, an updated MoU is being processed at the time of writing and is to be completed by the end of the 2021 fiscal year. The update process began in November 2021 as the immigration restriction to Japan was being relaxed, and a signing ceremony was planned at the Norwegian Embassy in Tokyo. Now, holding the ceremony at that time seems unfeasible due to the Omicron variant, and the signing itself might be postponed.



Participants of a workshop on Arctic air-sea interaction held in October 2016 in Bergen.
(Photo taken on the rooftop of the BCCR building)

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