

Summary of the Pacific Islands Advanced Ocean Acidification Monitoring Workshop

The Pacific Islands Advanced Ocean Acidification Monitoring Workshop was held at the University of Hawai'i at Manoa from 13-17 August 2018, organized by the Ocean Foundation, GOA-ON, and the US National Oceanic and Atmospheric Administration (NOAA) Ocean Acidification Program, and funded by the US Department of State and the Swedish International Development Agency. Eleven participants from seven Pacific Island States participated in a week of hands-on training with the equipment they received in the past year as part of the "GOA-ON in a Box" program. The program grants a set of laboratory and field equipment to chosen applicants, with the long-term goal of expanding carbonate chemistry monitoring and increasing capacity of scientists in developing countries to measure ocean chemistry.

Dr. Chris Sabine of the University of Hawai'i at Manoa and Drs. Rusty Brainard, Sophie Chu, and Hannah Barkley of NOAA were the lead trainers, supported by University of Hawai'i at Manoa students Noah Howins and Lucie Knor and Hawaii Pacific University student Kellie Teague. Alexis Valauri-Orton and Alexandra Puritz of the Ocean Foundation International OA Initiative and Meredith Kurz, Sea Grant Fellow at the NOAA Ocean Acidification Program and member of the GOA-ON Secretariat, provided staff support. This workshop was a follow-up advanced training to a workshop at the University of the South Pacific in Suva, Fiji, in November 2018, organized by the same groups and involving several of the same trainers. Some of the Fiji workshop participants had been selected to receive the "GOA-ON in a Box" kits, and were therefore invited to this advanced training. A similar workshop will be held in the Latin America region in January 2019; details and invitations to apply will be announced soon.



Front row, left to right: Evelyn Otto (Palau), Antoine de Ramon N'Yeurt (Fiji), Kellie Teague (USA), Rusty Brainard (USA), Katy Soapi (Fiji), Dylan Sabine (USA)

Back row, left to right: D'Eric Heinen de Carlo (USA), Aleluia Taise (Samoa), Noah Howins (USA), Krishna Kotra (Vanuatu), Meredith Kurz (USA), Alexis Valauri-Orton (USA), Ajay Singh (Fiji), Alexandra Puritz (USA), Chris Sabine (USA), Warren Pingo (Papua New Guinea), Christian Perez (Tokelau), Matt Enright (Papua New Guinea), Faoliu Teakau (Tuvalu)

Scientists representing Fiji, Papua New Guinea, Samoa, Tuvalu, Vanuatu, Tokelau, and Palau, and one representative of the Secretariat of the Pacific Regional Environment Programme (SPREP), began the week with a refresher in carbonate chemistry and the potential impacts of ocean acidification. For the next three days, they moved to the laboratory to practice measuring alkalinity of seawater, running a pH spectrophotometer, deploying a field pH sensor in a large cooler of seawater, using the co2sys software to calculate carbonate chemistry parameters, and interpreting the data collected through these aforementioned analyses. Each country team also had a chance to fine-tune their research plans through one-on-one conversations with the trainers. These conversations focused around, inter alia, best practices in site selection, instrument maintenance, and data and metadata management.

The participants also worked with the staff to create plans to strengthen regional collaboration going forward. The staff introduced the participants to the newly finished indicator methodology for Sustainable Development Goal 14.3: “Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.” The participants familiarized themselves with the metadata and data submission requirements, and set the goal to create ongoing monitoring programs in their countries that can contribute data to the indicator 14.3.1, “Average marine acidity (pH) measured at an agreed suite of representative sampling stations.”

At the end of the week, participants traveled to the Coconut Island laboratory facilities in Kaneohe Bay to learn more about the Automated Reef Monitoring Systems (ARMS) and Calcification Accretion Units (CAUs) used by Dr. Rusty Brainard and other coral scientists to monitor the biodiversity around reefs and their rate of calcification, respectively. Participants also observed these systems in situ at one of the research sites associated with the NOAA Coral Reef Instrumented Monitoring Platform (CRIMP2) in the Bay.

Participants ranked the workshop as successful, agreeing that they all felt more confident in using their “GOA-ON in a Box” kits to establish ongoing monitoring programs at their home institutions. Each country team was paired with a GOA-ON Pier2Peer mentor when they were selected to receive kits following the aforementioned workshop held in Fiji. The Ocean Foundation and GOA-ON plan to build a network of support for the scientists both through increased intraregional collaboration and through the one-on-one mentoring relationships under Pier2Peer. The participants, trainers, and staff are all optimistic that these two workshops will facilitate growth of OA monitoring in a region where carbonate chemistry data has been historically scarce.

For More Information:

The Ocean Foundation International OA Initiative: <https://www.oceanfdn.org/projects/hosted-projects/ocean-acidification>

‘GOA-ON kits’ Team on the OA Information Exchange: <https://www.oainfoexchange.org/teams/GOA-ON-Kits>

The Pier2Peer Program: <http://goa-on.org/pier2peer/pier2peer.php>

Ocean Chemistry at the University of Hawai’i: <https://www.soest.hawaii.edu/soestwp/research/themes/ocean/ocean-chemistry/>