

The PIER Review



Welcome to the February 2019 issue of the PIER Review, the monthly [GOA-ON Pier2Peer](#) newsletter. The Review highlights accomplishments, provides updates for our members, highlights open-access research on ocean acidification, and shares funding or job opportunities. Please send all of your ideas for the newsletter to Alicia Cheripka (alicia.cheripka@noaa.gov) and we will be sure to incorporate your feedback into future editions of The PIER Review.

P2P FEATURE



Participants in the Latin America and the Caribbean Regional Symposium on Ocean Acidification at INVEMAR, Santa Marta, Colombia (Photo: The Ocean Foundation)

This month's Pier2Peer feature highlights the *Latin America and the Caribbean Regional Symposium on Ocean Acidification*, which was hosted by the Ocean Foundation from 21-24 January 2019 at Instituto de Investigaciones Marinas y Costeras (INVEMAR) in Santa Marta, Colombia. The event was organized with support from GOA-ON, the Latin American Ocean and Coastal Acidification (LAOCA) regional hub, the U.S. Department of State, the Swedish International Development Agency, and the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO). sessions on science, policy, and industry-relevant aspects of ocean acidification. More than 80 participants from 15 countries attended the symposium, which brought together scientists, policy-makers, and industry professionals from around the region to collaborate and discover strategies for building resilience to ocean acidification.

Participants attended panels, lectures, and demonstrations in English and Spanish, featuring Dr. Leticia Barbero (University of Miami and the NOAA Atlantic Oceanographic Marine Laboratory, USA), Mr. Bill Dewey (Taylor Shellfish Farms, USA), Dr. Jose Martin Hernandez-Ayon (Universidad Autonoma de Baja California, Mexico), Dr. Burke Hales (Oregon State University, USA), Dr. Kirsten Isensee (IOC-UNESCO), Ms. Meghan Jeans (The Ocean Foundation, USA), Ms. Meredith Kurz (GOA-ON), Dr. Nelson Lagos Suarez (Universidad Santo Tomas, Chile), Dr. Christopher Langdon (University of Miami, USA), Ms. Melissa Melendez (University of New Hampshire, USA), Ms. Alejandara Navarrete (The Ocean Foundation,

Mexico), Mr. Mark J. Spalding (The Ocean Foundation, USA), Dr. Cesar Toro (IOCARIBE), and Ms. Alexis Valauri-Orton (The Ocean Foundation, USA).



Dr. Chris Langdon discusses a basic set-up for conducting biological experiments on the effects of OA on organisms with participants in the symposium (Photo: The Ocean Foundation)

Sessions highlighted options for low-cost chemical monitoring equipment, techniques for conducting biological experiments to evaluate impacts on species, strategies for adaptation and mitigation in aquaculture, and policy frameworks for building socio-economic resilience at local, regional, and national levels. The aforementioned representatives from IOC-UNESCO, IOCARIBE, LAOCA, GOA-ON, and Taylor Shellfish Farms discussed the importance of multi-disciplinary collaborations and gave examples of successful partnerships that fostered science and economic resilience in seafood supply chains.

The workshop included a LAOCA networking and poster session to foster new partnerships in the region. Participants also took a field trip to the Universidad del Magdalena Laboratorio de Moluscos y Microalgas in nearby Taganga to learn about their scallop hatchery and experiments on shellfish from Dr. Luz Adriana Velasco. Attendees learned about the newly completed Indicator Methodology for Sustainable Development Goal (SDG) 14.3: “Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels.”

Following the symposium, 14 scientists from Colombia, Ecuador, Jamaica, Argentina, and Mexico remained at INVEMAR to attend the Advanced Training in Ocean Acidification Monitoring from 28 January to 1 February 2019. These participants received the GOA-ON in a Box monitoring kit to establish ocean acidification monitoring programs at their home institutions. Drs. Hernandez-Ayon, Barbero, and Ms. Melendez were joined by Drs. Christopher Sabine (University of Hawai’i at Manoa) and Sophie Chu (University of Washington and NOAA Pacific Marine Environmental Laboratory) to give hands-on training to the kit recipients.

The recipients practiced manual alkalinity titrations, spectrophotometric pH analyses, bottle sampling in the field, data QA/QC protocols, the use of the co2sys program, and techniques to deploy, maintain, and interpret data generated by the iSAMI pH sensor. Participants also practiced using the data submission and metadata templates associated with the Indicator 1 for SDG 14.3, “Average marine acidity (pH) measured at agreed suite of representative sampling stations.” Finally, participants had one-on-one sessions with the expert trainers to help them create robust research and data management plans. Upon receiving the GOA-ON in a Box kit, trainees will generate weather-quality data to submit under SDG Indicator 14.3.1 and will remain active members of the GOA-ON, LAOCA, and Pier2Peer community.

BECOME A Pier2Peer RECRUITER

We are always recruiting senior and experienced OA observing experts to serve as mentors and early career scientists from emerging regions to become mentees. If you know someone who would be a good mentor or mentee, direct them to the [Pier2Peer website](#) or put them in contact with Alicia Cheripka (alicia.cheripka@noaa.gov).

If you are attending a meeting or event, are interested in sharing a few slides on the program and disseminating sign-up information, please email Alicia and we will send you communication materials and sign-up sheets for your upcoming event. And thanks!

UPCOMING EVENTS and CONFERENCES



[The 4th GOA-ON International Workshop](#) will be held on 14-17 April 2019 in Hangzhou, China. Registration is open now; abstract submission is now closed. Limited travel scholarships are available for qualifying scientists; instructions to apply are attached with this newsletter.

[The Association for the Sciences of Limnology and Oceanography \(ASLO\)](#) will hold the 2019 Aquatic Sciences meeting in San Juan, Puerto Rico, USA, from 23 February to 2 March 2019. There will be a session (#CS05) on ocean acidification. The deadline for abstract submission has passed but registration is still open.

[The American Geophysical Union \(AGU\) Geoscience and Society Summit](#) will be held on 12-21 March 2019 in Stockholm, Sweden. Abstract submission and registration are open.

[The Eleventh Western Indian Ocean Marine Science Association \(WIOMSA\) Scientific Symposium](#) will be held at the University of Mauritius from 1-6 July 2019. Abstract submission is now open.

[The International Association for the Physical Sciences of the Oceans \(IAPSO\) 2019](#) meeting will be held in Montreal, Canada, from 10-14 July 2019. Abstract submission and registration is now open. There will be a session on Coastal Ocean Acidification (P08).

[OceanObs'19](#) is part of a decadal conference series on setting ocean observation priorities to be held on 16-20 September 2019 in Honolulu, Hawaii, U.S.A. OceanObs'19 will announce some scholarships to attend for early career scientists and those working in developing nations. Abstract submission for white papers is closed. Poster abstract submissions are due 1 March 2019. Registration is open and early bird prices are available until 1 March 2019.

FUNDING and JOB OPPORTUNITIES

The Ocean Foundation Pier2Peer Scholarships

Organization: The Ocean Foundation

Description: Small grant program providing funds to Pier2Peer matches to collaborate on a project, conduct training visits, collect data for GOA-ON submission, etc.

Requirements: Applicants must be in a Pier2Peer partnership and applying to use funds to support this collaboration. Additional requirements apply and are listed in the attachment with this email.

Amount: USD 5,000

Application Deadline: 30 April 2019 is the due date for the 2019 First Quarter review period; applications are accepted on a continuing basis; submit to avalauriorton@oceanfdn.org and alicia.cheripka@noaa.gov. The application cycles and review process have been delayed by the U.S. government shut down in January.

Application Details: Attachment with this email

POGO Shipboard Fellows

Organization: The Partnership for Observation of the Global Ocean (POGO)

Description: POGO offers a number of shipboard fellowship opportunities on ocean research vessels. Normally, specific calls for fellows working in certain sub-disciplines are issued six months before a cruise begins. However, POGO also fills available berth with qualified applicants on shorter notice. They have an issued an open call for early career scientists, technicians, postgraduate students, or post-doctoral fellows involved in oceanographic work at centers in developing countries and countries with economies in transition. Qualified applicants will be contacted if an appropriate shipboard fellowship becomes available.

Requirements: Applicants must involved in oceanographic work in a developing country or country with an economy in transition. They must provide a fellowship proposal, intentions to build capacity for ocean observing, and a summary CV.

Amount: Round-trip ticket from home institute to the host institution; up to two months' stay at home institution to train prior to cruise; accommodation at ship port; ship messing fee; seafaring medical and sea survival course.

Application Deadline: Open call with no stated closure.

[Application Details](#)

Western Indian Ocean Marine Science Association Marine Research Grant Programme

Organization: Western Indian Ocean Marine Science Associated (WIOMSA)

Description: The award is designed to enhance the capacity of scientists in the Western Indian Ocean region to conduct marine research. There are three tiers (MARG I, II,III) that vary in duration and amount. MARG I and II applications are closed.

Requirements: Applicants should be young scientists studying the Western Indian Ocean region

Amount: USD 3,000 (MARG III), USD 6,000 (MARG II)

Application Deadline: No deadline for MARG III

[Application Details](#)

EMBO Short-Term Travel Fellowships

Organization: European Molecular Biology Organization

Description: The fellowship funds research exchanges of up to three months between laboratories in [eligible member countries and cooperation partners](#).

Requirements: Applicants must be from one of the member or cooperation countries and traveling to a lab in another member or cooperation country. Research must be related to life sciences. The travel must be associated with a larger project and not just limited to training in a technique, though it can include that type of training.

Amount: Travel and living costs of the traveling fellow

Application Deadline: Three months before proposed starting date of travel

[Application Details](#)

Jobs Lists:

[The Global Marine Community Newsletter & Jobs List](#)

[Ocean Opportunities](#)

[Josh's Water Jobs List](#)

NEWS and links to select OPEN ACCESS ARTICLES on OA

[Follow the IAEA OA-ICC for more news!](#)

News:

The Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) is pleased to announce the launch of the first prototype of [the IOC Ocean Data and Information System \(ODIS\) "Catalogue of Sources."](#) The Catalogue aims to be an online browsable and searchable catalogue of existing ocean related web-based sources/systems of data and information as well as products and services. It will also provide information on products and visualize the landscape (entities and their connections) of ocean data and information sources. The ODIS "Catalogue of Sources" should not be confused with data portals or even metadata systems: it does not provide access to ocean observation metadata or data but guides you to sources where you can find these. The Catalogue now contains nearly 300 records. If you provide an online ocean data/information product or service then IOC-UNESCO would like to invite you to add it to the ODIS Catalogue; but please check first if the record does not already exist. You will need to create an [OceanExpert](#) UserID and password to log on to the Catalogue.

The first Ocean Acidification Day of Action was organized on 8 January 2019. The date was chosen to represent the current pH of the ocean: 8.1. To find out more about this effort to raise awareness and share science around OA, visit the Ocean Foundation's [Waves of Change](#) website. Consider organizing a Day of Action for 2020, and share your plans with GOA-ON!

Open-access science:

Evans, W., Pocock, K., Hare, A., Weekes, C., Hales, B., Jackson, J., et al. (2019). [Marine CO₂ Patterns in the Northern Salish Sea](https://doi.org/10.3389/fmars.2018.00536). *Frontiers in Marine Science* <https://doi.org/10.3389/fmars.2018.00536>.

Kawahata, H., Fujita, K., Iguchi, A., Inoue, A., Inoue, M., Iwasaki, S., et al. (2019). [Perspective on the response of marine calcifiers to global warming and ocean acidification – Behavior of corals and foraminifera in a high CO₂ world “hot house.”](https://doi.org/10.3389/fmars.2018.00536) *Progress in Earth and Planetary Science* 6:5.

Liao, H., Yang, Z., Dou, Z., Sun, F., Kou, S., Zhang, Z., Huang, X., & Z. Bao. (2019). [Impact of ocean acidification on the energy metabolism and antioxidant response of the Yasso scallop \(*Patinopecten yessoensis*\)](https://doi.org/10.3389/fphys.2018.01967). *Frontiers in Physiology*. <https://doi.org/10.3389/fphys.2018.01967>.

Holmberg, R.J., Wilcox-Freeburg, E., Rhyne, A.L., Tlusty, M.F., Stebbins, A., Nye Jr., S.W., et al. (2019). [Ocean acidification alters morphology of all otolith types in Clark’s anemonefish \(*Amphiprion clarkii*\)](https://doi.org/10.3389/fphys.2018.01952). *PeerJ*. 7:e6152.

Jiang, L., Guo, Y.-J., Zhang, F., Zhang, Y.-Y., McCook, L.J., Yuang, X-C., et al. (2019). [Diurnally fluctuating pCO₂ modifies the physiological responses of coral recruits under ocean acidification](https://doi.org/10.3389/fphys.2018.01952). *Frontiers in Physiology* <https://doi.org/10.3389/fphys.2018.01952>.

Pajusalu, L., Dupont, S., Silvie Lainela, S. & G. Martin (2019). [Ocean acidification research in Estonia: challenges and opportunities](https://doi.org/10.3389/fphys.2018.01952). *Proceedings of the Estonian Academy of Sciences* 68:1

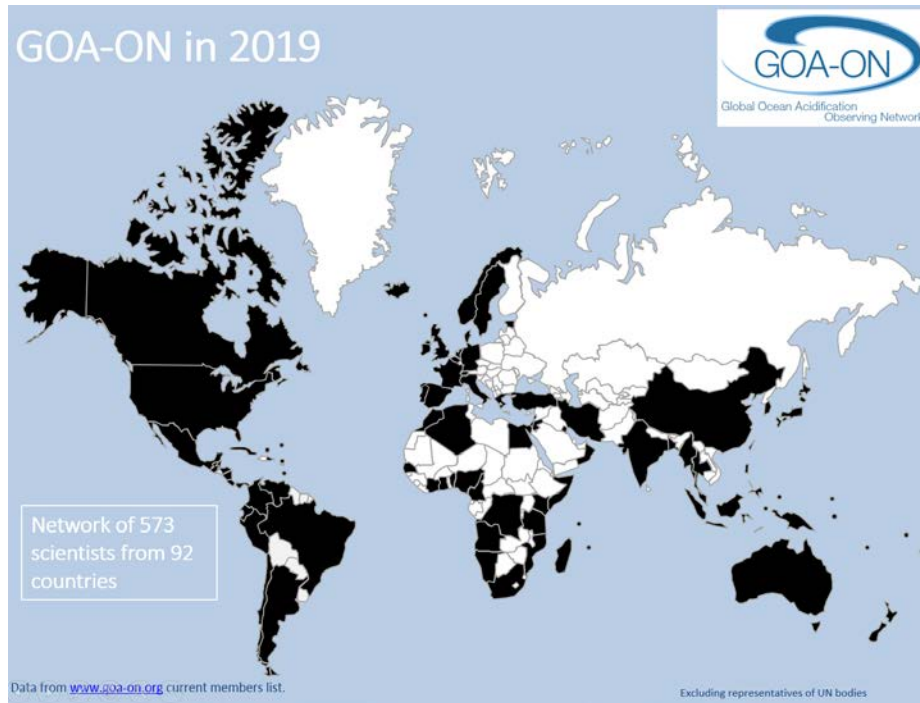
Perretti, A.R., Rizzatti de Albergaria-Barbosa, A.C., Kerr, R., & L. Cotrim da Cunha. (2019). [Ocean acidification studies and the uncertainties relevance on measurements of marine carbonate system properties](https://doi.org/10.1590/s1679-87592018000706602). *Brazilian Journal of Oceanography* 66(2). <http://dx.doi.org/10.1590/s1679-87592018000706602>.

Peck, V.L., Oakes, R.L., Harper, E.M., Manno, C. & G.A. Tarling. [Pteropods counter mechanical damage and dissolution through extensive shell repair](https://doi.org/10.1038/s41467-019-0966-4). *Nature Communications* 9: 264.

Pilcher, D.J., Naiman, D.M., Cross, J.N., Hermann, A.J., Siedlecki, S.A., Gibson, G.A., and J.T. Mathis. (2019). [Modeled effect of coastal biogeochemical processes, climate variability, and ocean acidification on aragonite saturation state in the Bering Sea](https://doi.org/10.3389/fmars.2018.00508). *Frontiers in Marine Science* <https://doi.org/10.3389/fmars.2018.00508>.

Silbiger, N.J. & C.J.B. Sorte. (2019). [Biophysical feedbacks mediate carbonate chemistry in coastal ecosystems across spatiotemporal gradients](https://doi.org/10.1038/s41598-019-41111-4). *Scientific Reports* 8: 796.

Webb, A.E., Pomponi, S.A., van Duyl, F.C., Reichart, G.-J., & L.J. de Nooijer. (2019). [pH regulation and tissue coordination pathways promote calcium carbonate bioerosion by excavating sponges](https://doi.org/10.1038/s41598-019-41111-4). *Scientific Reports* 9:758.



The GOA-ON is a network comprised of over 540 scientists from 84 countries, represented on the map in black. In 2019, GOA-ON has already welcomed 40 new members and added 7 new countries to the map!