

The PIER Review

Welcome to the July 2020 issue of the PIER Review, the monthly [GOA-ON Pier2Peer](#) newsletter! This edition features a description of the new and improved Pier2Peer matching process. Additionally, this issue contains relevant OA-related news, updates, funding and job opportunities, and recently published open-access publications. Please send ideas and feedback for future issues of the *Pier Review* to **Mike Acquafredda, the Pier2Peer Program Coordinator** (Michael.Aquafredda@noaa.gov).

Pier2Peer Program Assessment 2020

Please take a few moments (<5 minutes) to complete a survey about your experience in the Pier2Peer Program. These surveys will be used to determine the effectiveness of the Pier2Peer Program. We will use this information to improve the program, to grow the program's membership, and to explore additional funding opportunities for active mentor/mentee pairs. Your answers will not be seen by your mentors or mentees.

Mentees, access your survey [here](#).

Mentors, access your survey [here](#), and please complete one survey for each of your mentees.

P2P FEATURE

Calling for a just, equitable, diverse, and inclusive scientific community

As a global community of over 700 members from 100 nations, a guiding principle of GOA-ON and Pier2Peer actions has been to achieve a diverse and inclusive network. GOA-ON has hosted workshops, meetings, and trainings across the globe, which have strengthened the skills and relationships of OA scientists from dozens of countries. Support from many countries, foundations and organisations like the OA-ICC have facilitated the involvement of researchers in these activities with an aim to build a more inclusive and interactive research community. GOA-ON has also been a leader in OA observing capacity building, and through partnership with The Ocean Foundation to the development and distribution of OA observing kits ([GOA-ON in a Box](#)). In some instances, these kits have become the first OA observing assets in the countries in which they were set up.

Pier2Peer partnerships connect people across continents, uniting individuals who have had vastly different experiences. By extension, Pier2Peer can be as much of a cultural exchange as it is an exchange of scientific knowledge and expertise. The Pier2Peer/The Ocean Foundation Scholarships have also funded collaborative research in areas of the world that often receive too few resources. Overtime, Pier2Peer has built a community aimed at understanding the global and local state of OA observing as well as the global capacity needs required to effectively monitor, research, and educate the public about the effects of OA.

GOA-ON and Pier2Peer remain committed to diversity and inclusion, and call upon their membership to keep the networks accountable. Members are encouraged to remain vigilant and work to overcome racial and ethnic inequities in the scientific community. An insightful open letter about creating an anti-racist scientific community written by prominent geoscientists of color, Dr. Vernon Morris, Dr. Lisa White, et al., can be found [here](#). We also encourage the community to follow the lead of GOA-ON Executive Committee member, [Abed El Rahman Hassoun](#), and talk about their experiences on the [Ocean Acidification Information Exchange](#) (OAIE). We hope that the OAIE can be used to create more space for these discussions. Similarly, we hope the OAIE can facilitate efforts of GOA-ON and Pier2Peer to further [expand opportunities for underrepresented groups](#) in the OA community.

NETWORKS

[Become a Pier2Peer recruiter](#)

Many early career OA scientists need a mentor! Please help us recruit senior and experienced OA observing experts to serve as Pier2Peer mentors. If you know someone who would be a good mentor, direct them to the [Pier2Peer website](#) or put them in contact with Mike Acquafredda (Michael.Acquafredda@noaa.gov).

Additionally, if you are attending a meeting or event, and you are interested in sharing a few slides on the program and disseminating sign-up information, then please email Mike. He will send you communication materials and sign-up sheets for your upcoming event.

[Join the OA Info Exchange](#)

The OA Information Exchange (OAIE) is a place to swap ideas, share resources, and interact with people in a variety of disciplines across many regions. This includes your mentor or mentee! Members can:

- post updates and comments with questions, answers or announcements
- share papers, media files, presentations and links
- add events and host webinars
- join teams based on regions and topics of interest
- meet new people from a variety of fields

Scientists, citizen scientists, educators, NGO and government employees, resource managers, fishers, aquaculturists, concerned citizens, and others are all welcome to take part in the OA Information Exchange community! You can join [here](#).

[Join the Interdisciplinary Marine Early Career Network \(IMCaN\)](#)

Officially launched at the IMBeR Future Oceans2 Open Science Conference in Brest, France in 2019, IMECaN aims to:

- Provide a networking platform for early career marine researchers to develop collaborations;
- Provide training and development in areas not traditionally provided through formal education and training programmes; and
- Provide leadership opportunities for ECR marine researchers, particularly from developing nations.

Join the IMCaN and learn about upcoming activities [HERE](#)

NEWS

Call for manuscripts in the journal, *Diversity* (MDPI)

[Special issue “Effects of ocean acidification on marine ecosystems”](#)

Description: The expected impact of climate change on ecosystems and the service they provide to human populations is one of the most urgent research topics of our times. Among the various consequences of global climate change, ocean acidification is one subtle effect that is raising serious concerns in the scientific community due to the expected impacts on calcifying organisms, the biomineralized structures they produce, and associated communities. In recent decades, research on ocean acidification impacts has provided support for these concerns, as several negative impacts of this process have been observed in a variety of taxa in aquarium, mesocosm, and natural laboratory studies (e.g., carbon dioxide volcanic vents).

This Special Issue provides a framework to highlight new research contributing to our understanding of the impact of ocean acidification at all latitudes (polar to tropical), on all ecosystems, and through all scientific approaches (from observations in the field to laboratory-controlled experiments). Even if the session does not preclude other topics, studies focusing on the process of biomineralization and on the alteration of ecosystem services provided by systems impacted by ocean acidification are encouraged.

Dr. Erik Caroselli, *Guest Editor*

To submit your manuscript or to learn more about this special issue, click on the link above.

Deadline for submission: 15 October 2020.

Updates to the [GOA-ON Data Portal](#)

The newest version of [SOCAT](#) - Surface Ocean CO₂ Atlas - is available and has been integrated into the GOA-ON Data Portal. SOCAT is a synthesis activity for quality-controlled, surface ocean fCO₂ (fugacity of carbon dioxide) observations by the international marine carbon research community (>100 contributors). SOCAT data is publicly available, discoverable and citable. It is also a core data product for biogeochemistry endorsed by the Global Ocean Observing System ([GOOS](#)). The updated SOCAT data product can be accessed on the GOA-ON Data Portal by selecting “Layers” on the left-hand menu.

Additionally, the GOA-ON Data Portal now includes data links, metadata and track visualizations, and from 71 Biogeochemical Argo Floats ([BGC Argo](#)). These BGC Argo Floats all measure pH profiles throughout the water column, along with other hydrographic parameters. The BGC Argo Floats included on the GOA-ON Data Portal are managed by the Southern Ocean Carbon and Climate Observations and Modeling project, the Norwegian Institute of Marine Research, the Federal Maritime and Hydrographic Agency of Germany, the Second Institute of Oceanography China Argo Project and the Observatoire Océanologique de Villefranche.

New [GOA-ON Youtube Channel](#)

GOA-ON has launched a new Youtube Channel. Check out the network’s [first video](#) featuring GOA-ON co-chairs, Bronte Tilbrook and Jan Newton, and other prominent members of the OA community. Don’t forget to like and subscribe!

UPCOMING EVENTS & CONFERENCES

Ocean Acidification Week

The coronavirus pandemic has led to the postponement of many workshops, conferences and symposia worldwide this year. Among these is the [5th International Symposium on the Ocean in a High CO2 World](#) (see below), which was scheduled to take place in Lima, Peru, this September. This Symposium would have brought together researchers, decision makers, and other stakeholders to share cutting-edge science in a rapidly developing frontier of research, dealing with the science of ocean acidification and related emerging stressors. The Symposium is now scheduled to take place in September 2021.

In order to raise awareness to and maintain momentum around the upcoming Symposium, GOA-ON, the Symposium's International Scientific Committee, and other partners, will be hosting a virtual **"Ocean Acidification Week" on 8-10 September 2020**.

Ocean Acidification Week will engage the ocean acidification and broader oceanographic communities by raising awareness on global efforts being conducted related to monitoring, research, capacity building, stakeholder involvement, and education. Ocean Acidification Week will also serve as the official kick-off of a new GOA-ON Webinar Series, which will provide another opportunity for GOA-ON's more than 730 members to connect and collaborate.

Sessions will highlight the research being conducted across the GOA-ON regional hubs and how that work reflects GOA-ON's three [high-level goals](#). Moreover, early career scientists will be highly encouraged to participate as presenters, in order to provide these researchers with a platform to share their work. To stay up-to-date on the Ocean Acidification Week, make sure to follow GOA-ON on [Twitter](#) and [Facebook](#).

Please contact the GOA-ON Secretariat (secretariat@goa-on.org) if you have any questions.

[5th International Symposium on the Ocean in a High-CO2 World \(Lima, Peru\)](#)

~~7-10 September 2020~~/ **New dates TBD for 2021**

The 5th Symposium on the Ocean in a High-CO2 World is the place to share cutting-edge science in a rapidly developing frontier of research dealing with the science of ocean acidification and related stressors. The Symposium will feature keynote talks by some of the leading experts in the field, as well as special events on ocean acidification and aquaculture, carbonate chemistry and the Latin American Ocean Acidification Network (LAOCA). As with past symposia in this series, we anticipate GOA-ON to play an important role in presenting advancements in OA research.

Postponement information: Although the Symposium has been postponed due to the COVID-19 pandemic, the meeting venue remains the same. Workshops associated with the symposium should also be rescheduled. Abstract submissions will remain open until 15 March 2021. Senior authors of abstracts already submitted will be contacted to provide an opportunity to modify or update the abstract and the type of presentation (oral or poster). The new

meeting dates will be between late August and mid-September 2021. Exact dates will be posted on the Symposium website soon.

For more information on the Symposium themes and meeting details, please visit the Symposium website at <http://www.highco2-lima.org>.

2020 UN Ocean Conference

~~2-6 June 2020~~/ New dates TBD

Description: The Ocean Conference, co-hosted by the Governments of Kenya and Portugal, comes at a critical time as the world is strengthening its efforts to mobilize, create and drive solutions to realize the 17 Sustainable Development Goals (SDGs) by 2030. The UN Ocean Conference will propel much needed science-based innovative solutions aimed at starting a new chapter of global ocean action towards advancing [**SDG 14: Life Below Water**](#)

Location: Lisbon, Portugal

World Aquaculture 2020

New Dates: 14-18 December 2020

The annual meeting of the World Aquaculture Society will be held in Singapore this year. The Asian-Pacific region has dominated aquaculture production for decades. However, aquaculture continues to expand broadly across the region. Within Singapore, aquaculture is becoming increasingly integrated into its food system, making 2020 the perfect time for the world aquaculture community to focus on this island city-state. A major international trade show will also take place at the meeting. The trade show is a place to learn about the latest aquaculture technologies presented by exhibitors from around the world.

Location: Singapore EXPO Convention & Exhibition Centre and MAX Atria, Singapore

Registration is open now!

The American Geophysical Union's Fall Meeting

7 – 11 December 2020

AGU's Fall Meeting is the largest international Earth and space science meeting in the world. The meeting will be hosted virtually (mostly) and in San Francisco, California (possibly). Fall Meeting 2020 aims to bring a diverse and relevant set of topics to help move Earth and space science forward. It all starts with the innovative and dynamic session proposals from AGU's community. Session submissions are open now. We encourage sessions with diverse groups of conveners who can work together to broaden participation.

Notably, there will be an OA session at this conference. The P2P community is encouraged to submit their abstracts to this session, [The Earth System Response to Ocean Acidification](#)

For more information about the meeting's sessions, town halls, workshops, and innovative sessions, click [here](#).

Key dates:

~~15 April 2020—deadline for session, town hall, and workshop proposal submissions~~

June 2020 - abstract submissions open

29 July 2020 - deadline for abstract submissions

August 2020 - housing and registration open

7 December 2020 - Fall Meeting begins

FUNDING & JOB OPPORTUNITIES

The Ocean Foundation Pier2Peer Scholarships

Description: Small grant program providing funds to Pier2Peer matches to collaborate on a project, conduct training visits, collect data for GOA-ON submission, etc. Scholarships are given out on a quarterly basis. Applications can be submitted to Mike Acquafredda (Michael.Acquafredda@noaa.gov) and Alexis Valauri-Orton (avalauriorton@oceanfdn.org).

Requirements: Applicants must be in an active Pier2Peer partnership and applying to use funds to support this collaboration.

Amount: \$5000 USD

***Deadline:* Current quarter deadline: 31 July 2020**

In the Second Quarter of 2020, scholarships were awarded to:

Dr. Patrizia Ziveri & Falilu Adekunbi (\$5000 USD)

Monitoring seasonal coastal ocean acidification and coccolithophores: a study off the Southwestern coast of Nigeria (Gulf of Guinea)

The Ocean Acidification Information Exchange Microgrants

Description: The mission of the Ocean Acidification Information Exchange is to respond and adapt to ocean and coastal acidification by fostering an online environment built on trust, where our members, regardless of background, feel empowered to ask, answer, and learn from one another. To that end, OAIE offers grants for members who propose innovative strategies for leveraging the OA Information Exchange's collaboration tools to advance the community's mission, facilitate their own work related to ocean and coastal acidification and expand the reach/utility of the OAIE. Submit proposals using this [Google form](#). More information and criteria can be found on the [OAIE](#) or the [RFP](#).

Requirements: Must be a member of the OAIE

Amount: Between \$200USD and \$5000 USD.

Deadline: Rolling Basis

Acquire a free ocean sensing buoy from Aqualink

Aqualink is a philanthropically funded system to help people manage their local marine ecosystems in the face of increasing ocean temperatures. The system consists of satellite-connected underwater temperature sensors and photographic surveys to allow for remote collaboration with scientists across the world. If you are concerned about the effect of climate change on your local reef and want to do something about it then please apply to get a smart buoy for free.

REV Ocean Cruises in 2022

Description: REV Ocean will be opening its first call for proposals for research and innovation projects on board RV REV Ocean in April 2020. We are looking for the best marine scientists and innovators globally, to focus on solutions to three of the most important challenges facing the ocean today: (1) plastic pollution, (2) climate change / ocean acidification, and (3) overfishing and destructive fishing impacts. To ensure research proposals are of the highest quality and match with REV Ocean selection criteria, all projects will be evaluated in a thorough and transparent international peer-reviewed process. The successful proposals will have access to the vessel and its equipment for cruises in 2022.

Deadline: TBD - The date of announcement and closing for this call will be relatively short; follow their social media and check their [website](#) to be alerted when the call opens.

Western Indian Ocean Marine Science Association Marine Research Grant Programme

With support from the Swedish Government and the Western Indian Ocean Marine Science Association (WIOMSA), the Marine Research Grant (MARG) Programme seeks to enhance research capacity and increase our understanding of various aspects of marine sciences in the western Indian Ocean (WIO).

MARG-I: No longer accepting proposals

MARG-II: Intended to provide opportunities to individual research scientists to share their work, or gain technical experience by working in a specific laboratory. (Continued on next page) MARG II grants are also available for data analysis and manuscript write-up within the WIO region or where necessary, outside the region. The maximum duration of MARG-II is 3 months, and the maximum amount offered is \$6,000 USD. ***Proposals for MARG II Grants are reviewed continuously through the year as long as funds are available.***

MARG-III: Intended to provide opportunities for individual researchers to travel to attend scientific meetings and conferences for the purpose of presenting their work and learning from others. The maximum amount offered is \$3,000 USD. MARG III grants are provided for the purchase of return tickets, accommodation or daily subsistence allowance. ***Proposals for MARG III Grants are reviewed continuously through the year subject to availability of funds.***

For detailed instructions for applying for these grants, download the call for proposals and to apply visit <http://proposals.wiomsa.org>

For more information contact the WIOMSA secretariat: secretary@wiomsa.org

POGO (The Partnership for Observation of the Global Ocean) Shipboard Fellows

Description: POGO offers shipboard fellowship opportunities on ocean research vessels. Normally, calls for fellows are issued six months before a cruise begins, but POGO also fills available berths with qualified applicants on shorter notice. They have issued an open call for early career scientists, technicians, postgraduate students, and post-doctoral fellows involved in oceanographic work at centers in developing countries.

Requirements: Applicants must be involved in oceanographic work in a developing country or a country with an economy in transition. They must provide a fellowship proposal, intentions to build capacity for ocean observing, and a summary CV. Click here for [Application Details](#).

Amount: Round-trip transportation; up to two months' stay at home institution to train prior to cruise; accommodation at ship port; ship messing fee; seafaring medical/survival course.

Deadline: Open call with no stated closure.

EMBO (European Molecular Biology Organization) Short-Term Travel Fellowships

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. Click here for [Application Details](#).

Amount: Travel and living costs of the traveling fellow

Deadline: Three months before proposed starting date of travel

Research Assistant, Ocean Acidification Community of Practice Coordinator, U Calgary, Canada

Description: The Department of Geography in the Faculty of Arts at the University of Calgary in Canada invites applications for a Research Assistant. This full-time fixed term position is for approximately 19 months (based on length of grant funding), with the possibility of extension. This position reports to the Principal Investigator, and will support the activities of the Canadian Ocean Acidification Community of Practice, a [MEOPAR](#) initiative. The Research Assistant will ideally be located in Calgary, although a remote location outside of the Province of Alberta may be considered (which would necessitate an independent contractor arrangement). Applicants who are located in Calgary (or intend to relocate) as well as those interested in working outside of the Province of Alberta are both encouraged to respond to this job posting.

Requirements: (1) Undergraduate or Graduate (preferred) degree in marine science, including social science; (2) Research experience in a field related to ocean acidification or climate change with existing connections to the Canadian ocean acidification research community considered an asset; (3) Strong organizational and communication skills, initiative, writing ability, and the ability to work independently; (4) Experience with data management, research outreach, and/or communications

To read a full description of this position and to apply, click on the link above.

Deadline: 31 July 2020

Jobs Lists

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

[Ocean Opportunities](#)

[Josh's Water Jobs List](#)

[International Ocean Carbon Coordination Project Jobs](#)

[OA-ICC Job News Stream](#)

[NOAA OAP Job List](#)

[Ocean Carbon & Biogeochemistry List](#) (contains the listings in the image below)

THE LATEST LITERATURE

OA-ICC bibliographic database

The OA-ICC bibliographic database currently contains more than 6,200 references related to ocean acidification, and includes citations, abstracts and assigned keywords. In addition to being available in [Mendeley](#), this bibliographic database is now freely available on the platform [Zotero](#). In order to access this database, go to either of these citations management websites and create a free account. Click on the Groups tab, search for “OA-ICC”, and join this group. **To receive daily notifications of new ocean acidification literature, news, and opportunities, subscribe to the [OA-ICC News Stream](#).**

Here are some of the latest OPEN ACCESS OA-related articles

Bergstrom, E., Silva, J., Martins, C., & Horta, P. (2019). Seagrass can mitigate negative ocean acidification effects on calcifying algae. *Scientific reports*, 9(1), 1-11. DOI [10.1038/s41598-018-35670-3](https://doi.org/10.1038/s41598-018-35670-3)

Brady, R. X., Lovenduski, N. S., Yeager, S. G., Long, M. C., & Lindsay, K. (2020). Skillful multiyear predictions of ocean acidification in the California Current System. *Nature Communications*, 11(1), 1-9. DOI [10.1038/s41467-020-15722-x](https://doi.org/10.1038/s41467-020-15722-x)

Brooks, W. R., Rudd, M. E., Cheng, S. H., Silliman, B. R., Gill, D. A., Ahmadi, G. N., ... & Campbell, L. M. (2020). Social and ecological outcomes of conservation interventions in tropical coastal marine ecosystems: a systematic map protocol. *Environmental Evidence*, 9, 1-12. DOI [10.1186/s13750-020-00193-w](https://doi.org/10.1186/s13750-020-00193-w)

Cai, W. J., Xu, Y. Y., Feely, R. A., Wanninkhof, R., Jönsson, B., Alin, S. R., ... & Carter, B. R. (2020). Controls on surface water carbonate chemistry along North American ocean margins. *Nature Communications*, 11(1), 1-13. DOI [10.1038/s41467-020-16530-z](https://doi.org/10.1038/s41467-020-16530-z)

Cresswell, T., Metian, M., Fisher, N. S., Charmasson, S., Hansman, R. L., Bam, W., ... & Swarzenski, P. W. (2020). Exploring New Frontiers in Marine Radioisotope Tracing—Adapting to New Opportunities and Challenges. *Frontiers in Marine Science*. DOI [10.3389/fmars.2020.00406](https://doi.org/10.3389/fmars.2020.00406)

Dang, X., Wong, N. K., Xie, Y., Thiyagarajan, V., Mao, F., Zhang, X., ... & Noor, Z. (2020). Autophagy Dually Induced by AMP Surplus and Oxidative Stress Enhances Hemocyte Survival and Bactericidal Capacity via AMPK Pathway in *Crassostrea hongkongensis*. *Frontiers in Cell and Developmental Biology*, 8, 411. DOI [10.3389/fcell.2020.00411](https://doi.org/10.3389/fcell.2020.00411)

Falkenberg, L. J., Bellerby, R. G., Connell, S. D., Fleming, L. E., Maycock, B., Russell, B. D., ... & Dupont, S. (2020). Ocean Acidification and Human Health. *International Journal of Environmental Research and Public Health*, 17(12), 4563. DOI [10.3390/ijerph17124563](https://doi.org/10.3390/ijerph17124563)

Hancock, A. M., King, C. K., Stark, J. S., McMinn, A., & Davidson, A. T. (2020). Effects of ocean acidification on Antarctic marine organisms: A meta-analysis. *Ecology and Evolution*, *10*(10), 4495-4514. DOI [10.1002/ece3.6205](https://doi.org/10.1002/ece3.6205)

Jeong, S. M., Ko, S., & Sean, W. Y. (2020). Numerical Prediction of the Behavior of CO₂ Bubbles Leaked from Seafloor and Their Convection and Diffusion near Southeastern Coast of Korea. *Applied Sciences*, *10*(12), 4237. DOI [10.3390/app10124237](https://doi.org/10.3390/app10124237)

Kapetanaki, N., Krasakopoulou, E., Stathopoulou, E., Dassenakis, M., & Scoullou, M. (2020). Severe Coastal Hypoxia Interchange with Ocean Acidification: An Experimental Perturbation Study on Carbon and Nutrient Biogeochemistry. *Journal of Marine Science and Engineering*, *8*(6), 462. DOI [10.3390/jmse8060462](https://doi.org/10.3390/jmse8060462)

Laissue, P. P., Roberson, L., Gu, Y., Qian, C., & Smith, D. J. (2020). Long-term imaging of the photosensitive, reef-building coral *Acropora muricata* using light-sheet illumination. *Scientific Reports*, *10*(1), 1-12. DOI [10.1038/s41598-020-67144-w](https://doi.org/10.1038/s41598-020-67144-w)

Lampa, M. E., Sverdrup, H. U., Bishop, K. H., Belyazid, S., Ameli, A., & Köhler, S. J. (2020). Catchment export of base cations: improved mineral dissolution kinetics influence the role of water transit time. *Soil*, *6*(1), 231-231. DOI [10.5194/soil-6-231-2020](https://doi.org/10.5194/soil-6-231-2020)

Leseurre, C., Monaco, C. L., Reverdin, G., Metzl, N., Fin, J., Olafsdottir, S., & Racapé, V. (2020). Ocean carbonate system variability in the North Atlantic Subpolar surface water (1993-2017). *Biogeosciences*, *17*(9), 2553-2577. DOI [10.5194/bg-17-2553-2020](https://doi.org/10.5194/bg-17-2553-2020)

Lønborg, C., Carreira, C., Jickells, T., & Álvarez-Salgado, X. A. (2020). Impacts of Global Change on Ocean Dissolved Organic Carbon (DOC) Cycling. *Frontiers in Marine Science*. DOI [10.3389/fmars.2020.00466](https://doi.org/10.3389/fmars.2020.00466)

Matthes, K., Biastoch, A., Wahl, S., Harlaß, J., Martin, T., Brücher, T., ... & Rath, W. (2020). The Flexible Ocean and Climate Infrastructure Version 1 (FOCI1): Mean State and Variability. *Geoscientific Model Development Discussions*. DOI [10.5194/gmd-13-2533-2020](https://doi.org/10.5194/gmd-13-2533-2020)

Mensch, B., Neulinger, S. C., Kuenzel, S., Wahl, M., & Schmitz-Streit, R. A. (2020). Warming, but Not Acidification, Restructures Epibacterial Communities of the Baltic Macroalga *Fucus vesiculosus* with Seasonal Variability. *Frontiers in Microbiology*, *11*, 1471. DOI [10.3389/fmicb.2020.01471](https://doi.org/10.3389/fmicb.2020.01471)

Olischläger, M., & Wild, C. (2020). How Does the Sexual Reproduction of Marine Life Respond to Ocean Acidification?. *Diversity*, *12*(6), 241. DOI [10.3390/d12060241](https://doi.org/10.3390/d12060241)

Osma, N., Latorre-Melín, L., Jacob, B., Contreras, P., Von Dassow, P., & Vargas, C. (2020). Response of Phytoplankton Assemblages From Naturally Acidic Coastal Ecosystems to Elevated pCO₂. *Frontiers in Marine Science*, *7*, 323. DOI [10.3389/fmars.2020.00323](https://doi.org/10.3389/fmars.2020.00323)

Schroeder, K., Cozzi, S., Belgacem, M., Borghini, M., Cantoni, C., Durante, S., ... & Chiggiato, J. (2020). Along-path evolution of biogeochemical and carbonate system properties in the intermediate water of the Western Mediterranean. *Frontiers in Marine Science*. DOI [10.3389/fmars.2020.00375](https://doi.org/10.3389/fmars.2020.00375)

Schwarzahns, W., & Stringer, G. L. (2020). Fish otoliths from the late Maastrichtian Kemp Clay (Texas, USA) and the early Danian Clayton formation (Arkansas, USA) and an assessment of the extinction and survival of teleost lineages across the K-PG boundary based on otoliths. *Rivista Italiana di Paleontologia e Stratigrafia*, 126(2), 395-446. DOI [10.13130/2039-4942/13425](https://doi.org/10.13130/2039-4942/13425)

Stevenson, A., Archer, S. K., Schultz, J. A., Dunham, A., Marliave, J. B., Martone, P., & Harley, C. D. G. (2020). Warming and acidification threaten glass sponge *Aphrocallistes vastus* pumping and reef formation. *Scientific Reports*, 10(1), 1-11. DOI [10.1038/s41598-020-65220-9](https://doi.org/10.1038/s41598-020-65220-9)

Tames-Espinosa, M., Martínez, I., Romero-Kutzner, V., Coca, J., Algueró-Muñoz, M., Horn, H. G., ... & Packard, T. T. (2020). Metabolic Responses of Subtropical Microplankton After a Simulated Deep-Water Upwelling Event Suggest a Possible Dominance of Mixotrophy Under Increasing CO₂ Levels. *Frontiers in Marine Science*, 7, 307. DOI [10.3389/fmars.2020.00307](https://doi.org/10.3389/fmars.2020.00307)

Thomas, J. T., Munday, P. L., & Watson, S. A. (2020). Toward a Mechanistic Understanding of Marine Invertebrate Behavior at Elevated CO₂. *Frontiers in Marine Science*, 7, 345. DOI [10.3389/fmars.2020.00345](https://doi.org/10.3389/fmars.2020.00345)

Wagner, S., Schubotz, F., Kaiser, K., Hallmann, C., Waska, H., Rossel, P. E., ... & Blattmann, T. M. (2020). Soothsaying DOM: A current perspective on the future of oceanic dissolved organic carbon. *Frontiers in Marine Science*, 7. DOI [10.3389/fmars.2020.00341](https://doi.org/10.3389/fmars.2020.00341)

Zakroff, C. J., & Mooney, T. A. (2020). Antagonistic Interactions and Clutch-Dependent Sensitivity Induce Variable Responses to Ocean Acidification and Warming in Squid (*Doryteuthis pealeii*) Embryos and Paralarvae. *Frontiers in Physiology*, 11. DOI [10.3389/fphys.2020.00501](https://doi.org/10.3389/fphys.2020.00501)