

NOAA Ocean Acidification Community Meeting & Mini Symposium
Scripps Seaside Forum, La Jolla, CA
January 4-6, 2023

Event Location: Scripps Seaside Forum, 8610 Kennel Way, La Jolla, CA

Event Link: <https://attendee.gotowebinar.com/register/8346925357598879830>

Meeting Purpose and Objectives:

- Inform scientists across disciplines and regions of the most recent OAP-supported research efforts and findings
- Establish information needs to shape the next three years' strategic direction and goals of the OAP in line with the 2020 NOAA Ocean and Great Lakes Research Plan
- Foster collaborations within the OA research community to advance OAP strategic direction
- Identify the evolution of OA science, emerging hot topics and collaborative efforts to address critical research gaps
- Discuss diversity, equity, inclusion, accessibility, and justice in OA research and our community

Day 1 (Wednesday, January 4)

Registration, Coffee and Networking 8:00-8:30

Meeting Welcome and Objectives Margaret Leinen, SIO Director; Libby Jewett, OAP Director (8:30-9:00)

Observing, Predicting and Attributing Change

Chairs: Melissa Melendez, Sam Siedlecki, Kaity Goldsmith (9:00-10:30)

This session will showcase the latest science on observing, predicting and attributing change in our oceans and Great Lakes. What is currently being done? What challenges still exist? What are the best practices for identifying trends and changes? "Change" is defined as any change—in chemistry or in biological/ecosystem level—that is a consequence of OA.

10-minute talks:

- **Cai, Wei-Jun** - A synthesis of sea surface CO₂ trends, water column carbonate chemistry, and anthropogenic carbon accumulation rates along the North American ocean margins
- **Feely, Dick** - The Combined Impacts of Acidification and Hypoxia Along the West Coast of North America
- **Li, Ming** - Discerning the roles of ocean acidification, eutrophication and river alkalization in driving long-term pH trends in Chesapeake Bay
- **Towle, Erica** - NOAA's National Coral Reef Monitoring Program in the U.S. Pacific Islands: insights into OA impacts on coral reef ecosystems, lessons learned, and future directions
- **Olson, Elise** - Model Performance and Multistressor Extremes at NOAA OAP Buoys in GFDL's ESM4.1

Lightning talks:

- **Sutton, Adrienne** - Best practices for assessing Trends of Ocean Acidification Time Series (TOATS)
- **Keppler, Lydia** - Recent trends and variability in the oceanic storage of dissolved inorganic carbon
- **Fassbender, Andrea** - The subsurface response to accumulated anthropogenic carbon
- **Pilcher, Darren** - Modeling ocean acidification in the Bering Sea to support long-term planning and management of the largest U.S. fishery
- **Errera, Reagan** - Establishing an acidification monitoring and environmental stewardship program within the Great Lakes based National Marine Sanctuaries
- **Acosta, Jennifer** - Observations of phytoplankton community structure and biomass along north-south gradient of ocean acidification of the east coast of USA
- **Rintoul, Max** - Physical controls of nearshore biogeochemical variability on a fringing coral reef

Discussion/Q&A

Break Coffee and tea provided (10:30-10:45)

OA experiments: the expansion of multi-stressor experiments and experimental best practices

Chairs: Reagan Errera, Erica Ombres (10:45-12:15)

The specific focus of this session will be on lab and/or field based experiments and best practices in experimental design, with an aim to establish standard procedures when designing OA based experiments. Our objective is to inform the community of new research and collaborative opportunities (e.g. newly funded multi-stressors and HAB and OA projects) and provide a forum to highlight ongoing work that examines the various aspects in which ecosystems are changing due to global climate change.

- **Long, Chris** - How will projected temperature and pH changes affect Bristol Bay red king crab?
- **Hurst, Tom** - Comparing temperature and CO₂ effects on early life stages across Alaskan groundfish species
- **Busch, Shallin** - Response of adult krill to global change
- **Steeves, Laura** - Off-Shore Aquaculture Potential For The Atlantic Surfclam *Spisula solidissima*: In Situ Observations And Multi-Stressor Laboratory Experiments
- **Schatz, Annie** - Individual and interactive carry-over effects of ocean acidification and warming from the larval to juvenile stages of the Eastern oyster, *Crassostrea virginica*
- **Meseck, Shannon** - Energetic response to increase carbon dioxide under varying temperatures for juvenile Atlantic Sea Scallop, *Placopecten magellanicus*
- **Peacock, Misty** - Harmful Algal Blooms, Acidification, and Climate Change in the Salish Sea
- **Kramer, Ben** - Great Lakes acidification and harmful algal blooms

Discussion/Q&A

WORKING LUNCH Catered box lunches (12:15-1:45)

Community issue conversation #1: Reflecting on early OA hypotheses in environment, sensitivity, and human dimensions. (Lead: Dwight Gledhill and Andres Andersson)

Communication and Community Relationships with OA

Chairs: Kristen Green, Liz Perotti (1:45-3:00)

This session provides a forum to exchange ideas about communicating OA and connecting with external audiences. Case studies presented illustrate lessons learned, best practices and challenges and opportunities for connecting with different audiences. There is an open discussion on the challenges and barriers to engaging in meaningful outreach and connecting with communities and gaps in outreach to better support the community in furthering outreach goals.

Introduction - Liz Perotti, NOAA OAP

Three case study presentations

- **Wakefield, Kirstin** - Identifying a New Community for OA Outreach and Engagement: Recreational Anglers in the Mid-Atlantic
- **Grunin, Joanna** - Taking a Deeper Dive into Creating Effective Marine Education Materials
- **Hetrick, Willow** - The Chugach Regional Resources Commission (CRRC) is a Tribal non-profit fish and wildlife commission established in 1984 by the Tribes of Prince William Sound and Lower Cook Inlet

Group discussion

Break Coffee and tea provided (3:00-3:15)

Poster Session 1 and Networking *Coffee and tea provided* (3:15-4:15)

Panel: GOA-ON and UN Decade Perspectives Moderators: Sam Siedlecki, Gabby Kitch (4:15-5:00)

Panelists: Jan Newton, Dick Feely, Alexis Valauri-Orton, Samantha Siedlecki

Closing Remarks Libby Jewett, OAP Director (5:00-5:15)

Evening Event: Ocean Acidification Day of Action Gathering, Hosted by The Ocean Foundation at Scripps Seaside Forum (5:30-7:30pm)

Day 2 (Thursday, January 5)

Registration, Coffee and Networking 8:30-9:00

Welcome to the Day: Steve Thur, OAR Assistant Administrator; Libby Jewett, Director OAP (9:00-9:15)

Technology Development: What does the future of OA science technology look like?

Chairs: Todd Martz, Liza Wright-Fairbanks (9:15-10:30)

Presentations:

- **Saba, Grace** - The application of novel, autonomous profiling gliders for high resolution observations of coastal and ocean acidification in the US Northeast Shelf
- **Hunt, Chris** - Alkalinity along the USA East Coast (and beyond)- new observations, insights, and opportunities
- **Lawrence-Slavas, Noah** - Ocean Carbon Observing Technology Development at NOAA-PMEL
- **Osborne, Emily** - Using a multidisciplinary approach to promote understanding of carbon cycling in the Gulf of Mexico
- **Mazloff, Matthew** - Southern Ocean Acidification Revealed by Biogeochemical-Argo floats
- **Valauri-Orton, Alexis** - Development of a low-cost modular system and associated resources for carbonate chemistry measurements

Group discussion

Break Coffee and tea provided (10:30-10:45)

Regional Vulnerability Assessments

Chairs: Melissa Melendez, Kristen Green, Alex Puritz (10:45-12:00)

Presentations

- **Cochran, Courtney** - IWG Vulnerability Report
- **Siedlecki, Sam** - A dynamic pathway to transition from vulnerable to resilient fisheries social ecological systems: a transdisciplinary case study of the U.S. Atlantic sea scallop fishery
- **St Laurent, Pierre** - S.T.A.R.: Shellfish Thresholds and Aquaculture Resilience
- **Newton, Jan** - The Olympic Coast as a Sentinel: An Integrated Social-Ecological Regional Vulnerability Assessment to Ocean Acidification
- **Green, Kristen** - Adapting to Environmental Change: Strategies for West Coast Shellfish Aquaculture
- **Lowder, Kaitlyn** - Developing a scientific and stakeholder-led regional vulnerability assessment in Puerto Rico
- **Sabine, Chris** - Assessing Current and Future Ocean Acidification and Climate Vulnerabilities Along the Hawaiian Archipelago

Discussion/Q&A

WORKING LUNCH Catered box lunches (12:00-1:30)

Community issue #2: How to report harassment, scientific integrity, discrimination and other issues

Panel: IWG-OA Perspectives: Filling gaps and needs in OA science across Federal agencies Moderator: Courtney Cochran, OAP Program Specialist (1:30-2:15)

Panelists: Krisa Arzayus, Emily Osborne, Shallin Busch, Regina Easley

Marine Carbon Dioxide Removal (mCDR)

Chair: Melissa Melendez, Gabby Kitch (2:15-3:15)



Presentations:

- **Koweek, Dave** - Supporting Accelerated Research and Development for Marine Carbon Dioxide Removal
- **Cross, Jessica** - NOAA's Carbon Dioxide Removal Interest
- **Tune, Alison** - Monitoring and modeling surface ocean chemistry to predict and quantify impacts of ocean carbon interventions
- **Carter, Brendan** - Testing the use of electrochemical acid sequestration to ease ocean acidification through ocean alkalinity enhancement

Panel Q&A and Discussion

Poster Session 2 and Networking *Coffee and tea provided* (3:15-4:15)

Introduction to implementation tracking of the 2020 NOAA OA Research Plan: 4:15-5:00

- OAP Program Review intro (Erica Ombres, OAP Program Manager)
- Implementing National Research Objectives of OA science and identifying gaps (Kaity Goldsmith, OAP Program Specialist)

Closing Remarks Libby Jewett, OAP Director (5:00-5:30)

Evening Event: Happy Hour hosted by ClimateWorks and SIO, Send Lab Mooring Facility in Building "Rockweed South" (6:00 pm)

Day 3 (Friday, January 6)

Registration, Coffee and Networking 8:30-9:00

Welcome Dwight Gledhill, OAP Deputy Director (9:00-9:15)

OA Research Plan Strategic Breakouts: *Where do we want to go?* 9:15 - 10:45

- ***Charge:*** Prioritize opportunities for filling research gaps in the national research objectives and the FOARAM Act reauthorization that are most critical to making near-term progress. Breakout groups divided by Environmental Change, Biological Sensitivity, Human Dimensions.
- ***Charge:*** Strategize on what tools, expertise, partners and stakeholders are needed to make progress towards your focus research action(s)

Break Coffee and tea provided (10:45-11:00)

Report out from Breakout Groups and Discussion: OAP's Near Term Research Actions 11:00-12:00

Final Thoughts and Closing Remarks Libby Jewett, OAP Director (12:00-12:15)