

WIFI

Network: WHOI_Meeting

Password: OCBSummer2019

Ocean Carbon & Biogeochemistry (OCB) Summer Workshop

June 24-27, 2019 (Woods Hole Oceanographic Institution)

WORKSHOP AGENDA

SUNDAY, JUNE 23

6:30 pm Early career mixer (Grumpy's Pub, 29 Locust St., Falmouth)

MONDAY, JUNE 24

7:00 First shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)

7:30-8:30 Breakfast (tent outside of Redfield)

7:45 Second shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)

8:15-8:30* Final shuttle pickup at Inn on the Square and Holiday Inn (*You will miss breakfast)

Note: All shuttles will stop at Quissett parking lot before heading to Redfield

Welcome remarks

8:30-8:40 Mark Abbott (President & Director, WHOI)

8:40-8:50 Bethany Jenkins (Chair, OCB Scientific Steering Committee)

8:50-9:00 Heather Benway (Executive Officer, OCB Project Office)

Plenary Session 1. Anthropogenic changes in ocean oxygen: Coastal and open ocean perspectives (Redfield Auditorium)

Chairs: Julie Granger (Univ. Conn), Adam Martiny (UCI), Alyson Santoro (UCSB), Ben Twining (Bigelow)

9:00-9:25 Patterns of deoxygenation in the global ocean (Andreas Oschlies, GEOMAR)

9:25-9:50 Forced and unforced variations in ocean oxygen (Matthew Long, NCAR)

9:50-10:15 Oxygen as a proxy for detecting circulation and ventilation changes (Jerry Tjiputra, UniResearch, Norway)

10:15-10:40 Coastal deoxygenation in the northwest Atlantic due to a large-scale ocean circulation shift over the last century (Mariona Claret, JISAO/Univ. Washington)

10:40-11:10 Break

11:10-11:35 Processes that drive variability of hypoxia in the coastal ocean: Examples from the west coast of the US (Samantha Siedlecki, Univ. Connecticut)

11:35-12:00 Physical controls on dissolved oxygen and inorganic carbon dynamics in estuaries: Insights from simplified numerical models (Malcolm Scully, WHOI)

12:00-1:30 Lunch (tent outside of Redfield)

WIFI

Network: WHOI_Meeting

Password: OCBSummer2019

- 1:30-1:55 Biogeochemical controls on oxygen depletion across multiple scales in estuaries and the coastal ocean (Jeremy Testa, UMCES)
- 1:55-2:20 Long-term changes in Chesapeake Bay oxygen: impacts from global climate change and local anthropogenic stressors (Marjorie Friedrichs, VIMS)
- 2:20-2:45 Panel discussion

Community and agency updates

- 2:45-3:15 Agency updates and announcements (10 minutes each)
 - NSF - Hedy Edmonds, Mike Sieracki
 - NASA – Laura Lorenzoni
 - NOAA – Kathy Tedesco
- 3:15-3:30 Break
- 3:30-3:45 NASA PACE (Ivona Cetinić, NASA)
- 3:45-4:00 NASA EXPORTS (David Siegel, UCSB)
- 4:00-4:15 NASA Arctic-COLORS (Maria Tzortziou, CUNY)
- 4:15-4:30 Biogeochemical-Argo (Kenneth Johnson, MBARI)
- 4:30-5:15 **Student lightning session**
- 5:15-5:30 **Workshop shuttles transport participants to Clark building, Quissett Campus**
- 5:30-6:00 Tours of NOSAMS and LOSOS (only for participants who signed up)
- 5:30-7:30 **Poster session and welcome reception** (Clark 5th floor)
- 7:00-8:00 **Shuttles transport participants back to hotels**

TUESDAY, JUNE 25

- 7:00 **First shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)**
- 7:30-9:00 Breakfast (Clark 5th floor, WHOI Quissett campus)
- 7:45 **Second shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)**
- 8:15-8:30 **Final shuttle pickup at Inn on the Square and Holiday Inn**
- 8:00-10:00 **Poster session** (Clark 5th floor)
- 10:00-10:30 **Workshop shuttles transport participants to Redfield Auditorium, Village Campus**

Plenary Session 2. Approaches and challenges to understanding biogeochemical cycling across the land-ocean aquatic continuum (Redfield Auditorium)

Chairs: Marjorie Friedrichs (VIMS), Eileen Hofmann (ODU), Raleigh Hood (UMCES), Maria Tzortziou (CUNY)

- 10:30-10:35 Session introduction and overview (Marjorie Friedrichs, VIMS)

- 10:35-11:05 Impacts of freshwater discharge patterns on the carbon cycle in microtidal estuaries (Iris Anderson, VIMS)
- 11:05-11:35 Carbon remineralization and burial in the coastal margin: Linkages in the Anthropocene (Thomas Bianchi, Univ. Florida)
- 11:35-12:05 Simulating nitrogen cycling and transport across the river-coast-ocean continuum: a global perspective (Xiao Liu, NOAA GFDL)
- 12:05-12:45 Panel discussion - Panelists: Anderson, Bianchi, Liu, Raymond Najjar (Penn State Univ.), Goulven Laruelle (Free Univ. Brussels)
- 12:45-2:00 Lunch (tent outside Redfield) (***NOTE: BCO-DMO data tool demo in Redfield Auditorium**)
- 2:00-2:45 Lightning talks

ARCTIC MINI SESSION

- 2:45-3:15 Changing freshwater fluxes to the Arctic Ocean: A tale of melted ice, river runoff, and the Bering Strait (Lee Cooper, UMCES)
- 3:15-3:45 Recent work on riverine fluxes to the Arctic Ocean with a brief overview of Earth System modeling gaps in linking land to ocean (Joel Rowland, LANL)
- 3:45-4:30 Panel discussion - Panelists: Cooper, Rowland, Jessica Cross (NOAA/PMEL), Paty Matrai (Bigelow)
- 4:30 Free time and dinner on your own (Shuttle will transport participants from Redfield to Quissett parking lot and hotels)

WEDNESDAY, JUNE 26

- 7:00 First shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)
- 7:30-8:30 Breakfast (tent outside of Redfield)
- 7:45 Second shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)
- 8:15-8:30* Final shuttle pickup at Inn on the Square and Holiday Inn (*You will miss breakfast)

Note: All shuttles will stop at Quissett parking lot before heading to Redfield

Plenary Session 3. Calcification and the carbon cycle (Redfield Auditorium)

Chairs: Andrea Fassbender (MBARI), Jessica Cross (NOAA/PMEL)

- 8:30-8:55 Session introduction and overview (Andrea Fassbender, MBARI)
- 8:55-9:20 Are we there yet? Predicting coral calcification response to ocean acidification: From microscale mechanisms to macroscale responses (Weifu Guo, WHOI)
- 9:20-9:45 Understanding the complex controls on biocalcification: A closer look at SIR and saturation state (George Waldbusser, OSU)

- 9:45-10:10 Carbonate chemistry control on coccolithophore calcification: New findings and future directions (Lennart Bach, GEOMAR/IMAS Hobart)
- 10:10-10:45 Break
- 10:45-11:10 The multifaceted response of coccolithophores to increasing CO₂: Recent observations and modeling (Kristen Krumhardt, NCAR)
- 11:10-11:35 The role of calcification in carbonate compensation (Bernard Boudreau, Dalhousie)
- 11:35-12:00 Panel discussion
- 12:00-1:30 Lunch (tent outside Redfield) (***NOTE: BGC-Argo lunch discussion in Redfield Auditorium** – anyone who is interested in learning more and/or applying BGC-Argo floats to their research is invited to this informal lunch discussion)

Plenary Session 4. Carbon cycle feedbacks from the seafloor (Redfield Auditorium)

Chair: Clare Reimers (OSU)

- 1:30-1:55 Carbon cycle feedbacks from the seafloor: Session introduction and overview (Clare Reimers, OSU)
- 1:55-2:20 Temperate seagrass bed metabolism and carbon sequestration (Amelie Berger, Univ. Virginia)
- 2:20-2:45 Seasonal benthic metabolism on the shelf of the northern California Current System (Kristen Fogaren, OSU)
- 2:45-3:10 The fate of sediment storehouses of ancient methane in a warming Arctic Ocean (Katy Sparrow, Florida State Univ.)
- 3:10-3:45 Break
- 3:45-4:10 Current CaCO₃ dissolution at the seafloor caused by anthropogenic CO₂ (Olivier Sulpis, McGill Univ.)
- 4:10-4:35 Hadal trenches hot spots for organic carbon cycling in the deep ocean (Ronnie Glud, Univ. Southern Denmark)
- 4:35-5:00 Panel discussion
- 4:45 Shuttle will transport participants from Redfield to Quissett parking lot and hotels)
- 5:00-6:30 **Agency program manager panel with early career scientists** (Smith Conference Room, Village Campus)
- 5:45 Shuttle starts looping from hotels with stop at Quissett parking lot to workshop dinner
- 6:30-9:00 **Workshop dinner**
- 8:00-9:30 Shuttle transports participants back to Quissett parking lot and hotels

THURSDAY, JUNE 27

- 7:00 First shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)
- 7:30-8:30 Breakfast (tent outside Redfield)

- 7:45 Second shuttle pickup at Inn on the Square and Holiday Inn (2 separate shuttles)
8:15-8:30* Final shuttle pickup at Inn on the Square and Holiday Inn (*You will miss breakfast)
Note: All shuttles will stop at Quissett parking lot before heading to Redfield

Plenary Session 5. The effect of size on ocean processes (allometry) and implications for export (Redfield Auditorium)

Chair: Amy Maas (BIOS)

- 8:30-8:55 Size: The master trait (for better and for worse) (Amy Maas, BIOS)
8:55-9:20 Allometric scaling of community metabolism in estuaries and large oceanic provinces (Nicholas Nidzieko, UCSB)
9:20-9:45 Allometry in large-scale models of ocean biogeochemistry: Underlying patterns and processes (Anand Gnanadesikan, Johns Hopkins Univ.)
9:45-10:15 Break
10:15-10:40 Using allometry to model copepod-mediated carbon flux - how well do we estimate key rates and variables? (Karen Stamieszkin, VIMS)
10:40-11:05 The mechanistic trait-based approach to ocean life (Ken Andersen, Technical Univ. Denmark)
11:05-11:30 Panel discussion
11:30-12:00 **Overview and outcomes of the US GO-SHIP review facilitated by OCB and US CLIVAR** (Alison Macdonald, WHOI and Heather Benway, OCB/WHOI)
12:00-12:30 **OCB Phytoplankton Taxonomy Working Group Report** (Heidi Sosik, WHOI and Aimee Neeley, NASA GSFC)
12:30-12:45 Adjourn workshop and closing remarks
12:45-2:00 Lunch (tent outside Redfield)
1:00 **Shuttles start transporting participants back to Quissett parking lot and hotels**
1:30 **OCB Scientific Steering Committee (SSC) Meeting** (Watson 201, Quissett Campus, SSC members and agency representatives only)