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OCEAN NETWORKS CANADA PRESENT

# 2022 OCEAN WEBINAR SERIES

## **Ocean Responses to Climate Change**

29 Jan | Richard Dewey, Associate Director, Science

## **Solid Carbon: a Gigaton-scale Climate Solution**

5 Feb | Martin Scherwath, Senior Staff Scientist

## **Community Fishers: A Citizen Science approach to understanding ocean change**

12 Feb | Lucianne Marshall, Community Support Specialist  
& Ryan Flagg, Community Based Monitoring manager

## **Ocean Science, Ocean Art**

19 Feb | Dwight Owens, User Engagement Officer

**29 JANUARY - 19 FEBRUARY 2022, 10AM-NOON**  
**PRESENTED ONLINE VIA ZOOM | \$20 FOR 4 SESSIONS**

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# Ocean Responses to Climate Change

29 Jan 2022 | Richard Dewey

Covering over 70% of Earth's surface, the ocean is a prime driver and strongly influences local, regional, and global climates. In addition to latitude, proximity to the ocean is a key factor governing a location's climate. While anthropogenic activities have directly changed the chemical composition and thermal properties of the atmosphere, the ocean is not immune to changes in heat, salinity, and dissolved gases. We will broadly review the major drivers of climate change, and then look at the role of the ocean, how the ocean has responded, and what is likely to occur over the near future.



**Richard Dewey** is the Associate Director of Science with Ocean Networks Canada. He is an Oceanographer with degrees from UVic and UBC. He has focused his research on understanding small scale and regional ocean processes from turbulent mixing and boundary layers to tides and coastal dynamics.

# Solid Carbon: a Gigaton-scale Climate Solution

5 Feb 2022 | Martin Scherwath

It is now well recognized that climate scenarios for Earth to stay within the limits set by the Paris Agreement must include negative emission technologies to draw down excessive CO<sub>2</sub> from the atmosphere on a large scale. The Solid Carbon project is investigating one of the safest and most durable negative emission technology climate solutions, offshore carbon capture and geological storage in deep ocean basalt rock. This technology has a global scaling potential for sequestering gigatons of CO<sub>2</sub> per year.

A large team of Canadian and international collaborators is studying the technical aspects of modifying and combining existing technologies to enable direct air capture of CO<sub>2</sub> in the deep ocean, using sustainable energy on floating platforms, then pump the CO<sub>2</sub> into the basaltic ocean crust deep below the ocean and sediments, where over time the CO<sub>2</sub> will mineralize and form solid carbonate rock. Social and regulatory acceptance of this climate solution are also being addressed.



**Martin Scherwath** is a Senior Staff Scientist at Ocean Networks Canada, University of Victoria, Canada, with an expertise in marine geophysics, gas hydrates and seabed dynamics. Martin earned an M.Sc. degree from Leeds University in the U.K. and a doctorate from Victoria University in Wellington, New Zealand.



# Community Fishers: A Citizen Science Approach to Understanding Ocean Change

12 Feb 2022 | Lucianne Marshall & Ryan Flagg

Coastal marine environments, which provide food and livelihood to many coastal communities, are currently threatened by climate and anthropogenic stressors requiring robust monitoring to inform environmental stewardship decisions. To address this issue, Ocean Networks Canada - a University of Victoria initiative - developed the Community Fishes program, which empowers coastal communities across Canada to collect their own data through a 'Citizen Scientists' approach. The Community Fishers program equips users with a multiparameter sonde, connected to a tablet, that is easily deployed and retrieved from a vessel or sea-ice. To ensure standardized methodologies are followed among all communities, organizations, individuals across Canada the Community Fishers program offers university accredited training to all its participants.



**Lucianne Marshall's** role as the community support specialist is to facilitate ONC's partner communities and organisations to make the most of Ocean Networks Canada infrastructure and access the data available they may be interested in. This is anything from training community members on the operation of instruments, to use of our Oceans 2.0 data portal and interpreting and reporting on the data. Lucianne also works with Shipping and AIS data requests from scientists and communities



**Ryan Flagg** earned degrees in Mechanical Engineering from the University of Victoria in 2013 and Mechanical Engineering Technology from Camosun College in 2005. Ryan completed nine months of engineering co-op work while attending Camosun, almost 16 months while attending the University of Victoria, and over two years of engineering-related industry work while taking time away from post secondary education. Before joining Ocean Networks Canada, he worked on several oceanographic cruises aboard Canadian Coast Guard Ships near Vancouver Island and in the Canadian Arctic.

## Ocean Science, Ocean Art

19 Feb 2022 | Dwight Owens

As we embark on the UN Decade of Ocean Science for Sustainable Development, interest in the oceans is on the rise. One of the core UN outcomes is to foster “an inspiring and engaging ocean where society understands and values the ocean in relation to human well-being and sustainable development.” In support of this goal, Ocean Networks Canada has collaborated with several artists, each working in very different media and formats, to produce inspiring works of art. This session will share these works and engage the audience in exploration of art and science for the oceans.



**Dwight Owens** has over 25 years' experience in design and development of rich media and interactive education. Much of this work has been science-related. Since joining Ocean Networks Canada in 2008, Dwight has been immersed in the fascinating world of ocean sciences, supporting communications, outreach, and engagement with geophysicists, marine biologists, oceanographers, seismologists and acousticians.