

CANADIAN OCEAN SCIENCE NEWSLETTER
LE BULLETIN CANADIEN DES SCIENCES DE L'OcéAN

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Table of Contents

OCEAN SCIENCE NEWS.....	2
LabSea2020 – A new international cooperative research program in the Labrador Sea.....	2
The St. Lawrence Global Observatory.....	4
Karen Kohfeld CNC-SCOR West to East Tour Speaker.....	5
Cédric Chavanne CNC-SCOR East to West Tour Speaker.....	6
Oceana Canada in the Gulf of St. Lawrence.....	6
MEETINGS.....	7
52nd CMOS Congress.....	7
Goldschmidt 2018.....	7
50 th International Liege Colloquium on Ocean Dynamics.....	8
POSITIONS AVAILABLE.....	9
Dalhousie Oceanography Undergraduate Summer Research Awards.....	9
Sample postings from AcademicJobsOnline.org.....	9
GENERAL.....	10
CNC-SCOR Early Career Ocean Scientist Award.....	10
ACUNS-CNST Awards and Fellowships in Northern Studies.....	11
2018 Massey Medal.....	11
CMOS looking for nominations.....	11
The virtual CMOS Bulletin - Le Bulletin de la SCMO virtuel.....	12
News from SCOR International.....	12
Canadian Ocean Science Newsletter Le Bulletin Canadien des Sciences de l'Océan.....	13
CNC-SCOR.....	13

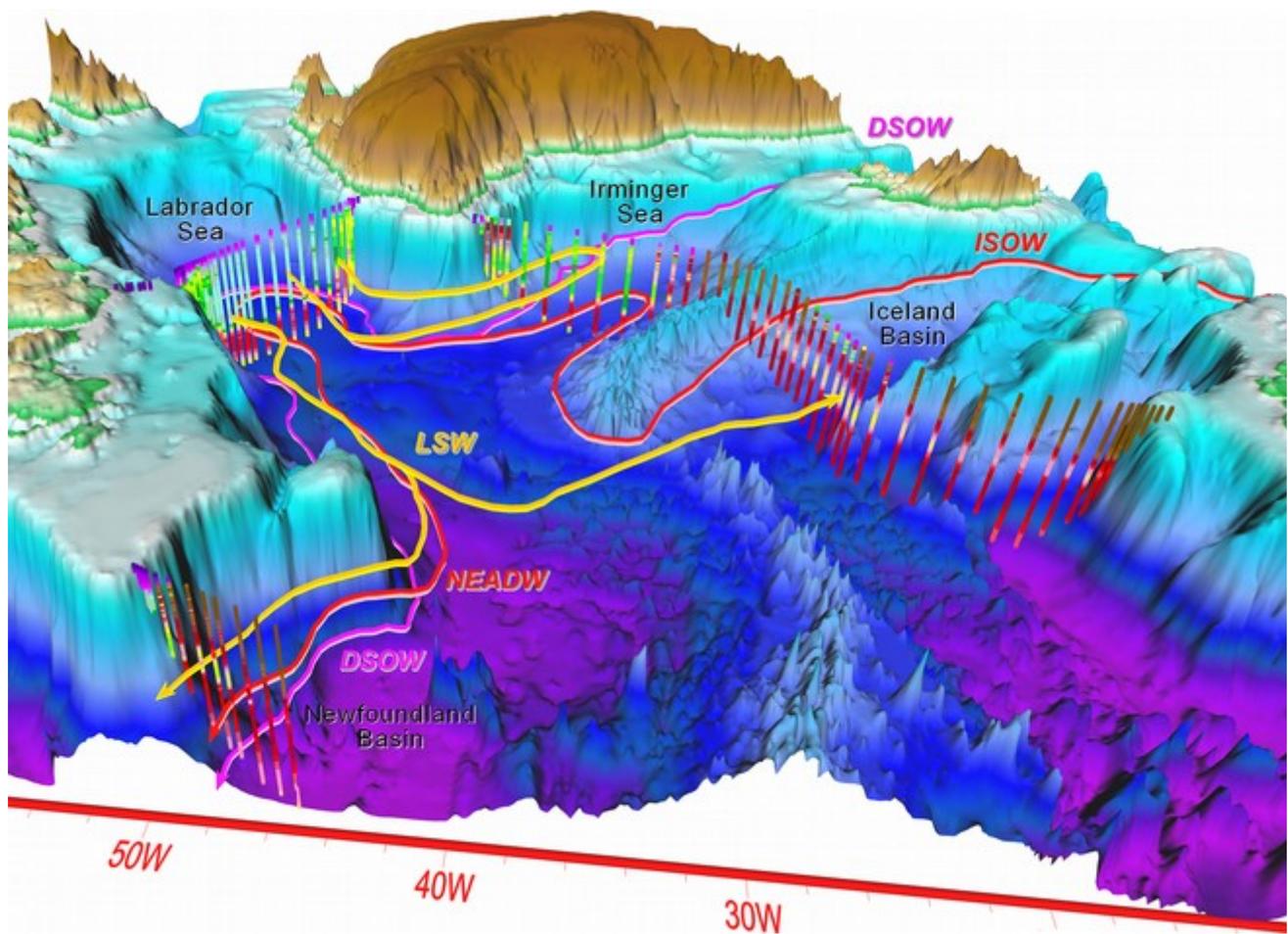


OCEAN SCIENCE NEWS

LabSea2020 - A new international cooperative research program in the Labrador Sea.

Doug Wallace, Dalhousie University and Brad deYoung, Memorial University

The Labrador Sea, off the east coast of Canada (see figure), is one of the few places where the deep ocean exchanges gases such as oxygen and carbon dioxide (CO₂) directly with the atmosphere. Localized deep convection releases large amounts of heat to the atmosphere and the resulting Labrador Sea Water contributes to the global ocean thermohaline circulation that redistributes heat from low latitudes to the poles. Transport out of the Labrador Sea carries oxygen and anthropogenic CO₂ into the North Atlantic interior, oxygenating subsurface layers and slowing the accumulation of CO₂ in the atmosphere, but exacerbating ocean acidification along Canada's sensitive eastern continental margin. The combined action of convection and horizontal circulation redistributes nutrients and contaminants (e.g. from future deepwater oil production along the deep Labrador slope) potentially affecting ocean productivity and marine ecosystem health.



I. Yashayev -2017

The Labrador Sea and adjacent seas, the atmosphere, surface ocean, and deep ocean interact in complex ways involving the interplay of physical, chemical, and biological processes that has global-scale impacts. The southwards transport of the Labrador Current, and associated water masses, is also part of an alongshore boundary current that connects outflow from the Arctic to the highly productive ecosystems of the eastern seaboard of North America. The Labrador Sea

has been the subject of several different focussed studies over the past forty years. In the 1980's, the first full convection studies were conducted by researchers from the Bedford Institute of Oceanography followed in the late 1990s by the Labrador Sea Deep Convection Experiment. While much has been learned about convection, transports and water property formation in this region, many fundamental questions remain unanswered.

These globally significant processes are regionally localized, temporally variable, and sensitive to the effects of ongoing climate changes. Gas uptake and redistribution processes are expected to respond to and feedback on climate change, as the high latitude warming surrounding the Labrador Sea increases stratification. Stratification changes may come from direct surface warming as well as the enhanced freshwater input from the melting of snow, multi-year sea ice and glaciers in Greenland and Canada. In either case, enhanced stratification will likely lead to a decline in deep water oxygen and anthropogenic CO₂ sequestration. With the accelerating rate of warming in the high North, multiple sources of freshwater now converge on the Labrador Sea, with the potential to disrupt deep convection, meridional ocean heat transport, climate, and ocean biogeochemistry at regional and global scales. The slowdown in deep water formation or of the Meridional Overturning Circulation may cut off the source of oxygen and "suffocate" the deep ocean, and reduce a critical sink of anthropogenic CO₂. In addition to impacts on gas budgets, changing stratification and far-field changes to ice-cover and biological productivity in the Arctic regions have the potential to alter nutrient concentrations and transports with potential consequences for biological productivity over large regions of the western Atlantic Ocean.

Thus, key open questions include: What is the relationship between convection and the Meridional Overturning Circulation (MOC)? How is the uptake of CO₂ changing with the possible slowdown of the MOC? Why is there a decline in nutrient concentrations and what are the implications? How will the Labrador Sea respond to changes in the cryosphere (e.g. Greenland and other high latitude glaciers) and changing sea-ice conditions in the Arctic Ocean?

We propose that these and other questions become the focus of a cooperative, multidisciplinary and international study focussed on the Labrador Sea and its surroundings in 2020. The initiative is intended to be "bottom-up" and link researchers and research initiatives with shared interest in the region. This year of research will address fundamental science questions which would initiate the Decade of the Ocean for Sustainable Development (2021-2030) coordinated by the International Oceanographic Commission and just approved by the United Nations. We are looking for partners who would like to contribute or be involved and invite them to contact either Doug Wallace (Douglas.Wallace@dal.ca) from Dalhousie University or Brad deYoung (bdeyoung@mun.ca) from Memorial University. We have a website and Facebook page in preparation and will hold webinars as well as a discussion at the Ocean Sciences Meeting in Portland in February. So keep your eyes open!



Labrador Sea Christopher Pratt 1980

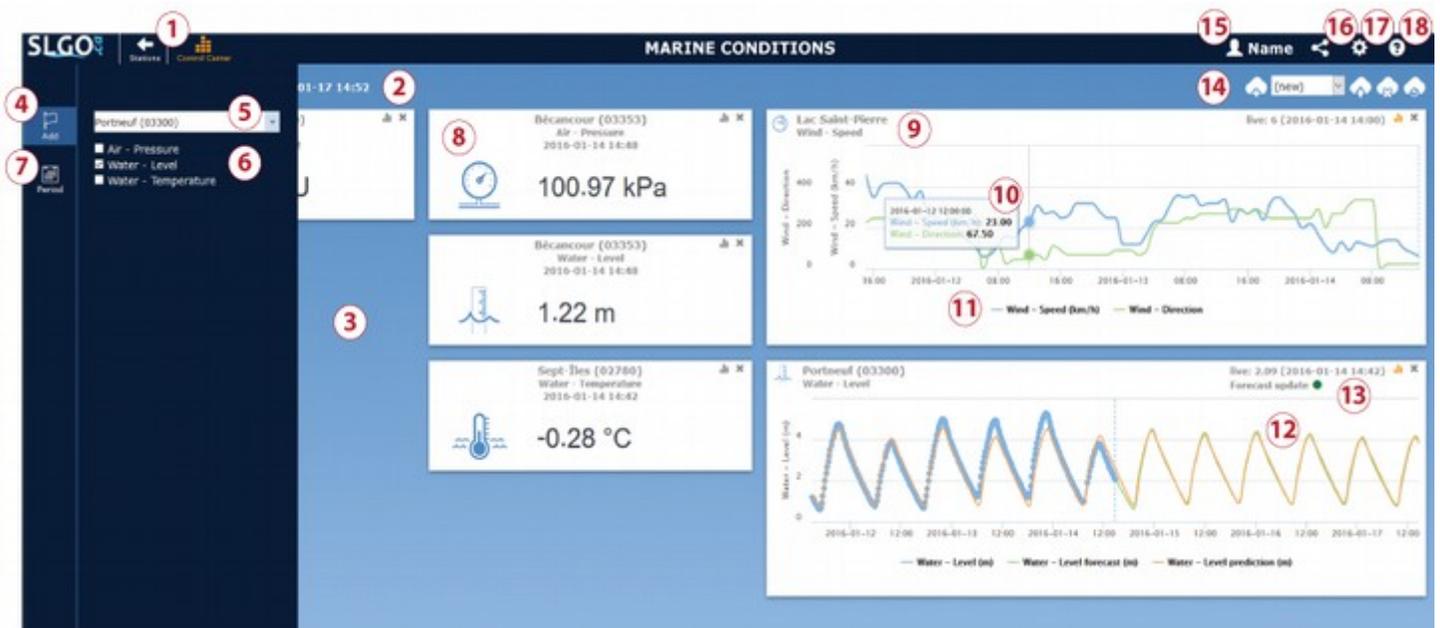
The St. Lawrence Global Observatory



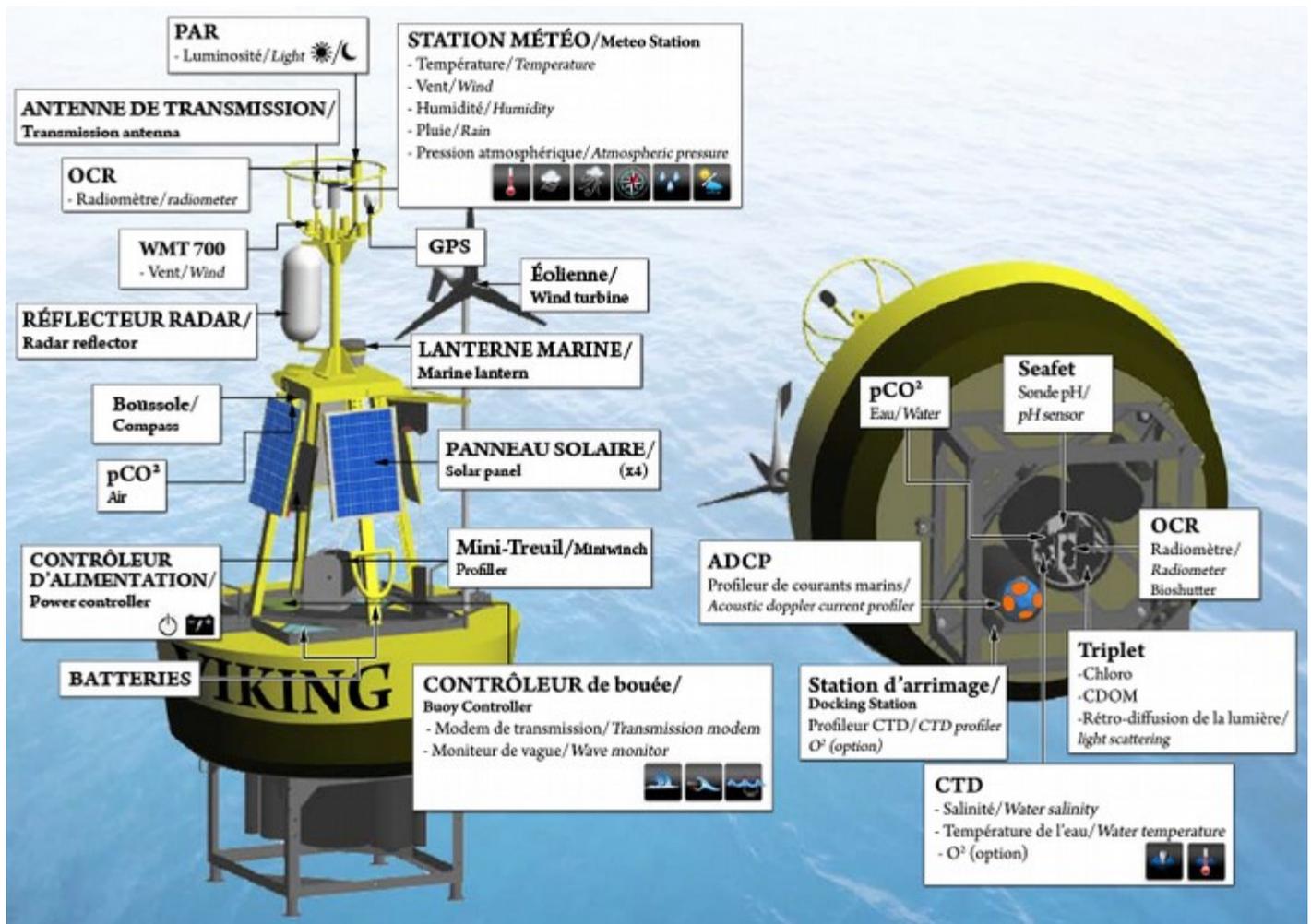
The St. Lawrence Global Observatory (SLGO) is a very broad collaboration of federal and provincial governments, academic and community organizations. The SLGO's mission is to promote and facilitate accessibility, dissemination and exchange of official and quality data as well as electronic information regarding the St. Lawrence ecosystem through the consolidation and networking of various producers and data-producing organizations in order to meet both their needs and those of users, and also to improve knowledge and help decision-making in areas such as public safety, climate change, transportation, resource management and biodiversity conservation.

Access to information highlighted by the SLGO also offers development opportunities geared toward public and private sectors of derived products and services, consequently generating considerable socio-economic benefits.

The content distributed by the SLGO spans across all disciplines, themes and areas of interest that information-producing members choose to make accessible. A large amount of scientific and environmental information is already available on the SLGO portal. In order to maximize data democratization, the SLGO team continues to develop user-friendly Web applications so to facilitate visualization and data downloading in various formats by means of directly usable free software.



The clientele targeted is very broad, it includes data producers and data holders themselves, and also: the general public, community issue tables, the industry, specialist clientele such as university researchers, research units and even diverse communities such as maritime shipping, environmental assessment, etc.



The SLGO provides [on-line access](#) to historical data, real time information and predictions.

Karen Kohfeld CNC-SCOR West to East Tour Speaker

Each year CNC-SCOR selects someone from the West coast to give a lecture tour heading East, and someone from the East to give a lecture tour heading West. The person heading East gives talks, over about 1 week at some combination of eastern oceanographic institutes and schools. The 2017-18 Eastern annual CNC-SCOR tour speaker is Dr. Karen Kohfeld from Simon Fraser University.

Dr. Kohfeld is a Professor in the School of Resource and Environmental Management (REM) at Simon Fraser University in Vancouver, Canada. She received her PhD from the School of Earth and Environmental Sciences at Columbia University (NY, USA) and subsequently was a research scientist at Lund University (Sweden) and at the Max Planck Institute for Biogeochemistry (Germany). Karen is known internationally for her work in Earth Systems science and global carbon cycling. She has focused on understanding the role of atmospheric dust and ocean productivity in long-term global climate change and uses global datasets to test climate models. A former Tier 2 Canada Research Chair in Climate, Resources, and Global Change, Karen formed the Climate, Oceans, and Paleo-Environments (COPE)



laboratory at SFU in 2006, where she also focuses on regional changes in climate and the carbon cycle and involves students in projects relating to extreme weather behavior, ocean acidification, and climate-related shifts in fire frequency and carbon storage in terrestrial ecosystems.

Her talk will be titled: The Oceans Role in Atmospheric Carbon Dioxide Changes During Ice Age Cycles. The tour is planned for January 29 to February 2. The itinerary is now being arranged and will involve stops in Quebec, Rimouski, Ottawa, St. John's and Halifax.

More information on Dr. Kohfeld and her program can be found at:

<https://www.sfu.ca/rem/people/profiles/kohfeld.html>

<http://meopar.ca/research/project/i-cap>

<https://www.sfu.ca/fenv/news/dr-karen-kohfeld-research-group-win-awards.html>

Cédric Chavanne CNC-SCOR East to West Tour Speaker

Just as this newsletter was being finalized, we have confirmation that Cédric Chavanne, of l'Institut des sciences de la mer at Rimouski Quebec will be the CNC-SCOR tour speaker from eastern Canada talking at venues in western Canada. No details of the timetable and venues have been determined yet.

[Cédric's web page.](#) [Some of his research.](#)



Oceana Canada in the Gulf of St. Lawrence

[Oceana Canada](#) is associated with Oceana, Inc. which, founded in 2001, is the largest international organization focused solely on ocean conservation. The Oceana family includes organizations in Brazil, Belize, Chile, the European Union, Peru, the Philippines and the United States. Oceana Canada campaigns for national policies that rebuild fisheries. They work with civil society, academics, fishers, and government to return Canada's formerly vibrant oceans to health. Their work in the [Gulf of St. Lawrence](#) is highlighted in a series of short videos including the titles [behind-the-scenes](#), [Laurentian Channel North](#), [Martha L. Black](#), [American Bank](#), [Quebec City](#) and the longer [overview](#).



This section of your newsletter provides an opportunity to highlight your research programs to the Ocean Science Community.

*Your are invited to send contributions to
David Greenberg,
david.greenberg@dfo-mpo.gc.ca*

Mettez en valeur vos programmes de recherche en publiant un article dans cette première section de votre bulletin.

*Faites parvenir vos contributions à
David Greenberg,
david.greenberg@dfo-mpo.gc.ca*

MEETINGS

52nd CMOS Congress

Halifax, June 10-14, 2018

Marine and Environmental Risks and Impacts



The preparations for the next CMOS congress are well underway. The [Call for Session Proposals](#) is now out. These should be submitted by Dec 18, 2017. Scientific and plenary sessions of the Congress will take place from Monday, June 11 to Thursday June 14. In addition, time and venue space have been set aside on Sunday, June 10th for related workshops, business meetings, courses and other Congress-related events, as well as an icebreaker reception to be held that evening. Please see the call for prize nominations in this newsletter's *General* section below.

[Congress website](#)



Goldschmidt 2018

Boston, MA, USA

August 11-17, 2018

Goldschmidt is an international conference on geochemistry and related subjects, organised by the Geochemical Society and the European Association of Geochemistry. Please [sign up](#) to the mailing list to receive email updates.

Dates:

March 30, 2018

Abstract Submission Deadline

January 1 - June 12, 2018

Early Registration Rates apply

June 13 - July 12, 2018

Standard Pre-registration rates apply

August 11-12, 2018

Pre-conference workshops

Website: <https://goldschmidt.info/2018/index>



50th International Liege Colloquium on Ocean Dynamics

Liège, Belgium

28 May - 1 June, 2018

The conference is looking for abstracts in the study of the ocean using long-term datasets, based on in situ data, remote sensing data, model simulations and reanalyses. Works that evidence the importance of maintaining in time the in situ and remote sensing datasets, and review studies that provide a perspective of the advancement of science during the last decades using these long-term datasets are also welcome.



Dates:

January 19 2018 Abstract Submission Deadline

March 30 2018 Early Registration Deadline

Website: <http://labos.ulg.ac.be/gher/home/colloquium/colloquium-2018/>

*Please send meeting announcements to
David Greenberg,
david.greenberg@dfo-mpo.gc.ca*

*SVP faites parvenir vos annonces de réunion à
David Greenberg,
david.greenberg@dfo-mpo.gc.ca*

POSITIONS AVAILABLE

Dalhousie Oceanography Undergraduate Summer Research Awards

Dalhousie oceanography supervisors will be offering NSERC Undergraduate Summer Research Awards projects in Oceanography for Summer 2018. Those wishing to apply for one of the following NSERC USRA projects should submit the following to the project supervisor: your CV; a brief statement of interest which outlines your area of academic interest as well as past education and/or employment experiences that would contribute to your work on the research project; and official transcripts from all previously attended universities.



The project titles include:

- Carbon and nitrogen dynamics in Bay of Fundy tidal flats
- Ship noise in the Arctic
- Sources and Sinks of Nitrite in the Surface Atlantic Ocean
- Use of Structure from Motion Analysis to Quantify Coastal Erosion Rates at Thomas Cove, Minas Basin, Nova Scotia
- Oceans and global change
- Monitoring of benthic populations in coastal habitats and deep-sea areas designated for protection
- Trends and variability in coastal British Columbia marine heatwaves
- The Madden-Julian Oscillation, snowfall and storms over eastern North America
- Carbon analysis in Arctic waters
- Biogeochemical nitrogen cycling in a lake containing anoxic, ancient seawater
- Investigating the inorganic carbon cycle in the Labrador Sea using samples collected in 2014 and 2015 by the CERC.OCEAN group

Deadline January 29, 2018.

Contact information [here](#).

Sample postings from [AcademicJobsOnline.org](#)

Duke University: Full time [postdoctoral associate](#) for a two-and-a-half year fellowship, available immediately to work with an interdisciplinary team to evaluate the social, environmental, economic, and governance contributions of small-scale fisheries. The fellow will be in residence at the Duke Marine Laboratory on the North Carolina coast and will also spend time at FAO headquarters in Rome as needed.

Deadline January 30, 2018

Josephine Bay Paul Center: The Marine Biological Laboratory seeks a motivated [postdoctoral scientist](#) who will develop genome editing techniques, including CRISPR/Cas9, in rotifers, a novel aquatic invertebrate model system for studies of aging, neurobiology, developmental biology, ecology, and evolution.

No deadline given.

Stanford University: The Department of Earth System Science and the Woods Institute for the Environment at Stanford University invite applications for a [tenure-track faculty appointment](#) in the area of Environmental Risk and Adaptation. The focus of the search is on risks from global environmental change to people and the planet, including adapting to, planning for, and reducing such risks.

Reviewing applications now, listing ends December 31 2017.

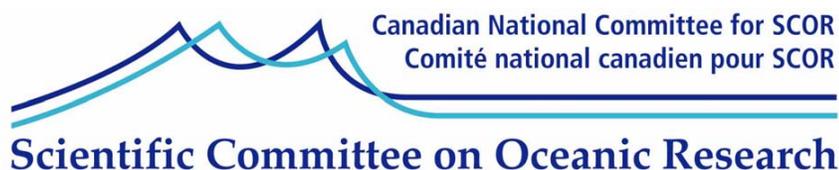
Looking for work? Try the CMOS site ([click](#)).

Vous recherchez un emploi? Visitez le site SCMO ([click](#)).

GENERAL

CNC-SCOR Early Career Ocean Scientist Award

The **CNC-SCOR Early Career Ocean Scientist Award** is presented to an early career oceanographer/marine scientist for an outstanding contribution to marine sciences (in the broadest sense) within Canada. The award can be based on a single work/paper that provides a seminal contribution to the field, or ongoing work at a sufficiently high level of excellence that provides an outstanding overall contribution.



The Award: The award winner will receive a plaque with the award, as well as funds, from CNC-SCOR, to travel to the upcoming CMOS congress to receive the award and present a paper. Additionally, the award winner will be invited to sit on the CNC-SCOR committee for 1 year beginning with the CMOS Congress associated with their award.

Obligations of winner: The winner will acknowledge CNC-SCOR on their presentation at the CMOS-Congress, and will be asked to provide a 1 to 2 page article on their research for the Canadian Ocean Sciences Newsletter.

History of the Award: The award was presented for the first time in 2016. It is open to candidates (Canadians, working in Canada or overseas, or permanent residents) who are within 10 years of completion of their Ph.D. (note that periods of leave (e.g., parental, health) during this period do not count against the 10 year duration, provided appropriate documentation is provided). The candidate can work in any area of marine sciences, including academia, government, industry, NGO's, etc.

Award Nomination Instructions: Nominations are to be received no later than **15 February 2018**, by email to the CNC-SCOR secretary: David.Greenberg@dfo-mpo.gc.ca to be considered by the selection Committee. Receipt of submissions will be provided if requested.

Nominations will be adjudicated by the CNC-SCOR committee and will require a nomination letter highlighting the nominee's merits (maximum 2 pages), plus 2-4 supporting letters as well as an up to date CV of nominee. Nominations not selected for the award in previous years will be maintained active for three subsequent years (although they can be updated) or until the 10-year deadline has passed.

ACUNS-CNST Awards and Fellowships in Northern Studies

The [Canadian Northern Studies Trust](#) (CNST) is the awards program of the Association of [Association of Canadian Universities for Northern Studies](#) (ACUNS). It was established in 1982 to advance knowledge and understanding of Canada's North. The purpose of the CNST is to develop a cadre of scholars and scientists with northern experience and, at the same time, to enhance the educational opportunities available for northern residents.



There are [many grants and scholarships available](#) as well as operational research support for people working in the North from with awards varying from \$2,500 to \$50,000. A fieldwork component is part of many of the awards. The application has multiple components.

Deadline for all awards: January 31, 2018

2018 Massey Medal

Established in 1959 by the Massey Foundation, the Massey Medal is awarded annually by the Royal Canadian Geographical Society. Its purpose is to recognize outstanding career achievement in the exploration, development or description of the geography of Canada. Eligibility is restricted to Canadian citizens, although in special circumstances, the Medal may be awarded to a non-Canadian, subject to agreement by the Massey Foundation. It is always awarded to an individual, never a group.

The presentation of the Massey Medal is usually made at Rideau Hall by the Society's Patron, the Governor General, when His/Her Excellency's schedule permits. In years when this is not possible, a special award ceremony is held at the College of Fellows Annual Dinner in Ottawa, with the President of the Society presiding.

All [nominations](#) must be submitted [on-line](#) and must be received by 11:59pm EST on January 15, 2017. The Committee will retain nominations under consideration for a period of three years.

Deadline: 11:59pm EST, January 15, 2018



CMOS looking for nominations

February 15th is the deadline for nominations for the **CMOS Prizes and Awards**. Visit <http://www.cmos.ca/site/awards> for a list of the eight awards, for instructions on how to make a nomination and then submit something on behalf of one of your colleagues or students. CMOS has a rich history recognizing deserving persons (members and non-members) through its awards programs.

March 15th is the deadline to recognize your colleagues by nominating one or more of them to be a **CMOS Fellow** or **CMOS Honorary Fellow**.

The titles "CMOS Fellow" and "Honorary CMOS Fellow" may be granted for exceptional long term service and support to the Society and/or outstanding contributions to the scientific,



professional, educational, forecasting or broadcasting fields in atmospheric or ocean sciences in Canada.

Please take a moment to visit <http://www.cmos.ca/site/fellows> for information about these designations and instructions on how to submit a nomination. Awards will be presented at the 52nd CMOS Congress in Halifax June 10 - 14th, 2018.

Note that any inquiries and all nominations are to be forwarded to the CMOS Awards Coordinator at awards-coord@cmos.ca.

The virtual CMOS Bulletin - Le Bulletin de la SCMO virtuel

Tous les articles du *Bulletin* et toutes les actualités de la SCMO sont désormais accessibles partout et en tout temps à l'adresse <http://bulletin.scmo.ca> ou <http://bulletin.cmos.ca>. L'accès est gratuit et ouvert. Ainsi, lorsque vous publiez et faites la promotion de vos travaux dans le *Bulletin*, votre message atteint le monde entier. Nous vous encourageons à soumettre articles et nouvelles, tandis que nous nous efforçons d'élargir la portée des impacts positifs du partage de nos connaissances. Veuillez consulter la page *Auteurs* du nouveau site Web (<http://bulletin.scmo.ca/about/policies/>), qui décrit la façon de soumettre vos articles.



Now, all of your Bulletin articles and CMOS news items are available to you anytime, anywhere, through <http://bulletin.cmos.ca> and <http://bulletin.scmo.ca>. No sign-in is required, which means that as you publish and promote your work through the Bulletin your message can reach people all over the world. As we look to spread the positive impacts of sharing our knowledge further afield, we need your articles and news items. Please refer to the *Authors* page on the new website (<http://bulletin.cmos.ca/about/policies/>) for guidance on submitting articles.

News from SCOR International

60th Anniversary SCOR Newsletter

The 60th Anniversary edition of the *SCOR Newsletter* is now available at <http://www.scor-int.org/Publications/SCOR-NL-35.pdf>.

Welcome to the Irish SCOR Committee!

SCOR welcomes the Irish SCOR Committee to the SCOR family! The Nominated Members from the Irish SCOR Committee are Peter Croot, Eleanor O'Rourke, and Brian Ward. The Irish SCOR committee will provide an interface between international SCOR activities and Irish scientists via dissemination of information within Ireland on SCOR activities. The Irish SCOR committee will link with other international organizations and groups related to oceanographic research and



training (e.g., POGO). The Irish SCOR Committee also will act as a link to other international marine organizations (e.g., OSPAR, ICES, etc) active in Ireland and to the Future Earth Ireland committee in the context of common activities (e.g., SOLAS and IMBER).

Canadian Ocean Science Newsletter Le Bulletin Canadien des Sciences de l'Océan

Previous newsletters may be found on the [CNC/SCOR](#) web site.

Newsletter #98 will be distributed in **January 2018**.

Please send contributions to David Greenberg
david.greenberg@dfo-mpo.gc.ca

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SIGNOFF OCEAN-NEWSLETTER

Les [bulletins](#) antérieurs se retrouvent sur le site web du [CNC/SCOR](#).

Le Bulletin #98 sera distribué en **janvier 2018**.

Veillez faire parvenir vos contributions à David Greenberg, david.greenberg@dfo-mpo.gc.ca

Si vous désirez vous abonner à bulletin, veuillez envoyer un courriel à listserv@lists.mcgill.ca avec le message suivant:

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SIGNOFF OCEAN-NEWSLETTER

CNC-SCOR

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Rob Macdonald – Past Chair (DFO-IOS)
David Greenberg – Secretary (DFO-BIO)
Markus Kienast (Dalhousie)
Marty Taillefer (Maritime Way)
Ian Perry (DFO-PBS)
Paul Snelgrove (Memorial)
Stephanie Waterman (UBC)
Kimberley Davies (Dalhousie)

Le Comité national canadien du Comité scientifique de la recherche océanographique (SCOR) favorise et facilite la coopération internationale. Il reflète la nature multidisciplinaire de la science océanique et de la technologie marine.

Members Ex-Officio/ Membres d'office

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Keith Lennon (DFO-HQ)
Wayne Richardson (President CMOS)
Gordon Griffith (Executive Director CMOS)
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Jean-Éric Tremblay (Québec-Océan)
David Beauchesne (Québec-Océan étudiants)
Laura Gillard (CMOS students)

The Canadian National Committee of the Scientific Committee for Oceanic Research (CNC-SCOR) fosters and facilitates international cooperation. It is a non-governmental body that reflects the multi-disciplinary nature of ocean science and marine technology.

WWW.CNCSCOR.CA