

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

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**How can EON-ROSE integrate climate science and Earth science?**

K.J.E., Boggs<sup>1</sup>, P., Audet<sup>2</sup>, D.W., Eaton<sup>3</sup>, M. Fayek<sup>4</sup>, J.T., Freymueller<sup>5</sup>, R.D., Hyndman<sup>6</sup>, T. James<sup>6</sup>, P.J., Kushner<sup>7</sup>, P. Myers<sup>8</sup>, M.G., Sideris<sup>3</sup>, P. Sullivan<sup>9</sup>, and M., Ulmi<sup>6</sup>

<sup>1</sup> Mount Royal University, <sup>2</sup> University of Ottawa, <sup>3</sup> University of Calgary, <sup>4</sup> University of Manitoba, <sup>5</sup> University of Alaska Fairbanks, Director of EarthScope National Office, <sup>6</sup> Geological Survey of Canada, NRCan <sup>7</sup> University of Toronto, incoming President of CMOS <sup>8</sup> University of Alberta, past President of CMOS, <sup>9</sup> University of Kansas

EON-ROSE (Earth-System Observing Network - Réseau d’Observation du Système terrestRE) is a new initiative for a pan-Canadian research collaboration to holistically examine Earth systems from the magnetosphere into the mantle. The Canadian Cordillera Array (CCArray) is a pilot phase that will extend across the Cordillera from the Beaufort Sea to the U.S. border (Figure 1).

The vision for EON-ROSE is to install a network of telemetered observatories to monitor solid-Earth, environmental and atmospheric processes (Figure 2). EON-ROSE is a combined effort of Canadian universities, federal, provincial and territorial government agencies, industry, and international collaborators. Brainstorming sessions and multiple workshops have been held since May 2016. Here we summarize a recent symposium, held in Ottawa (February 21-23, 2018), and present information and a call for collaboration, with particular focus on applications of EON-ROSE to space physics, oceanographic, atmospheric, hydrological, cryospheric and ecosystem sciences and numerical modeling including weather, Earth system, land-surface and watershed.



Figure 1: Proposed distribution of earth observation stations for CCArray at an 85km spacing. The red circles and triangles are the US TA Array stations in Alaska and northwestern Canada. The light blue circles are the ~165 proposed earth observation stations for CCArray. The various other colours and symbols are broadband seismometers from a variety of academic and federal government groups (courtesy of S. Azevedo, and R. Busby)

The EON-ROSE symposium in Ottawa focused on national applications related to (i) Solid Earth and Resources, (ii) Fluid Earth, Critical Zone and Environmental Monitoring, and (iii) Natural Hazards and Information Synthesis. This symposium started with a presentation by Daniel Lebel, the Director General of the Geological Survey of Canada, and an overview of the US EarthScope program by Jeff Freymueller, the Director of the EarthScope National Office in Fairbanks, Alaska

(Figure 3). EarthScope was identified as the top science experiment of the decade by Popular Science in January 2011, in part because the array of broadband seismometers permitted imaging of discontinuities deep into the Earth's mantle.

A key element of the proposed EON-ROSE and CCArray initiatives involves integrating oceanography,

atmospheric sciences, space physics, critical zone science and numerical weather modeling with the solid Earth geosciences. Of main interest to the CMOS community would be the presentations during the "Fluid Earth, Critical Zone and Environmental Monitoring" session. Paul Kushner (University of Toronto; incoming president of CMOS) presented an overview of "Atmospheric dynamics and climate" and then presented on Paul Myers' behalf (University of Alberta; past president of CMOS) about "Ocean circulation and freshwater at high-latitudes. Pamela Sullivan (University of Kansas) discussed the opportunities for developing Critical Zone Observatories in Canada. The critical zone refers to the region between the top of the tree canopy to the bottom of the aquifer - the zone critical for supporting life. Jeff Freymueller commented on how geophysical networks can be used to monitor environmental and geophysical features.

Calvin Klatt (Director General of the Canadian Geodetic Survey (CGS)) presented on solid and fluid Earth applications by the CGS. Thomas James (NRCan) outlined how glacial isostatic adjustment (GIA) is critical in Canada for monitoring sea level change, seismic activity and hydrological changes across Canada. Gilbert Brunet also provided slides outlining potential applications to numerical weather modeling for the EON-ROSE and CCArray initiatives.

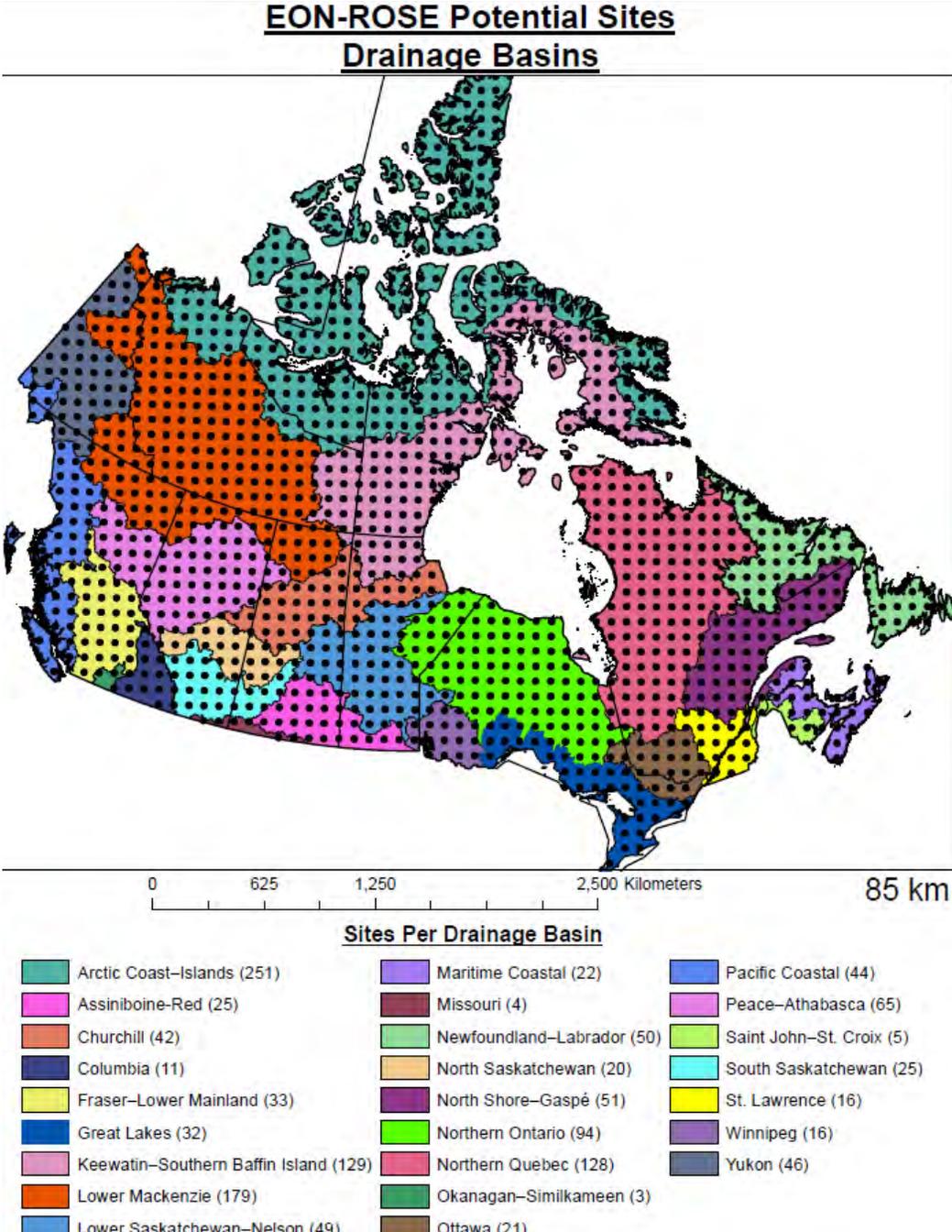


Figure 2: Proposed distribution of earth observation stations (black dots) for the pan-Canadian EON-ROSE at an 85km spacing superimposed on the main Geodetic Survey (CGS) drainage basins (courtesy of T. James).

Further details about these initiatives are available at [www.ccarray.org](http://www.ccarray.org) and in Boggs et al. (2018). Potential collaborators, questions or suggestions? Please contact any of the authors of this document or any of the scientific theme leads mentioned in the organizational chart on the [ccarray.org](http://ccarray.org) website.

## REFERENCE

Boggs, K.J.E., Aster, R.C., Audet, P., Brunet, G., Clowes, R.M., de Groot-Hedlin, C.D., Donovan, E., Eaton, D.W., Elliott, J., Freymueller, J.T., Hedlin, M.A.H., Hyndman, R.D., James, T., Kushner, P.J., Morell, K.D., Rowe, C.D., Schutt, D.L., Sideris, M.G., Ulmi, M., Vernon, F.L., and West, N., accepted. EON-ROSE and the Canadian Cordillera Array - Building Bridges to Span Earth System Science in Canada. Geoscience Canada.



Figure 3: Morning speakers from the EON-ROSE Symposium (February 21, 2018). From right to left: Daniel Lebel (Director General Geological Survey of Canada), Kristina Archibald (NSERC), Pascal Audet (University of Ottawa; EON-ROSE Executive), Dave Eaton (University of Calgary, EON-ROSE Director), Jeff Freymueller (University of Alaska Fairbanks, Director of EarthScope National Office), Katherine Boggs (Mount Royal University, EON-ROSE Executive).

La stabilisation et le démantèlement du navire *Kathryn Spirit* sont des opérations complexes qui ont nécessité et qui continuent de demander une importante coordination entre plusieurs intervenants fédéraux, provinciaux et municipaux. Les priorités pour la Garde côtière canadienne et tous ses partenaires sont d'abord et avant tout d'assurer la sécurité des travailleurs lors du démantèlement, la protection de l'environnement ainsi que la communication avec les partenaires et les communautés riveraines.

### **Un navire abandonné**

Construit en 1967, le *Kathryn Spirit* est un navire-cargo canadien qui a navigué principalement dans les eaux canadiennes pour le transport de divers types de marchandises. À la fin de sa vie utile, il a été vendu à des intérêts locaux dans le but d'être démantelé à Beauharnois, puis revendu dans l'intervalle à une compagnie étrangère qui a fait faillite et qui l'a finalement abandonné sur place - toujours à Beauharnois - en novembre 2015. Au printemps suivant, la baisse des niveaux d'eau du lac Saint-Louis a causé l'échouement du navire et une forte gîte. La Garde côtière a alors constaté que l'eau s'était infiltrée dans les compartiments du navire. Dans ces conditions, il devenait très difficile de prévoir son comportement.

### **Stabilisation**

Face à la situation, la Garde côtière canadienne est intervenue rapidement afin d'éviter que le navire ne chavire et ne pollue l'environnement. Grâce au savoir-faire et à l'expérience de ses agents d'intervention environnementale, un plan d'action a pu être développé afin d'éviter une pollution marine. Le plan prévoyait en effet la mise en place de mesures visant à réduire au minimum les conséquences sur la sécurité publique et l'environnement.

Différents scénarios de déversement ont été élaborés et des mesures d'atténuation ont été identifiées. Des équipes d'intervention soutenues par des équipements de lutte contre la pollution ont été mobilisées sur place. Dans un premier temps, des barrières flottantes ont été installées autour du navire afin de minimiser les impacts si un déversement venait à se produire. Par la suite, les hydrocarbures flottant en surface dans les compartiments inondés ont été récupérés afin de réduire le risque potentiel de débordement. De plus, afin de stabiliser le navire, un contrat a été octroyé à une firme spécialisée en sauvetage maritime pour procéder à l'installation de câbles d'acier retenus par un système d'ancrages terrestres et deux barges à pieux ont été installées du côté du lac Saint-Louis.

Par la suite, un ouvrage a dû être construit d'urgence autour du navire afin de l'isoler du lac, d'assurer sa stabilité malgré la fluctuation des niveaux d'eau et la présence de glace ainsi que de créer un accès pour le démantèlement. Tous les efforts requis ont été déployés pour ce projet :



*Le Kathryn Spirit est un navire-cargo canadien qui a été abandonné en 2011 sur les rives du lac Saint-Louis à Beauharnois.*

- réalisation des analyses techniques;
- évaluation des impacts environnementaux;
- obtention des autorisations et des permis nécessaires;
- mise en place des mesures de protection;
- construction de l'ouvrage sur le littoral avant l'augmentation des niveaux d'eau liée à la crue printanière.

L'équipe de projet a opté pour la construction d'un remblai de pierre avec un muret de palé-planche, option pour laquelle un contrat a été octroyé en novembre 2016 et complété en février 2017.

### **Vers le démantèlement**

En octobre 2017, une compagnie a été sélectionnée en vue de procéder au démantèlement du navire *Kathryn Spirit*. Ce dernier sera démantelé d'ici octobre 2018 et le remblai sera retiré avant décembre de la même année. Finalement, le site sera réaménagé et ramené à son état initial, soit avant l'arrivée du navire à Beauharnois, au plus tard au printemps 2019. À chaque étape du processus, la Garde côtière canadienne demeure en contact avec ses partenaires fédéraux, provinciaux et municipaux ainsi qu'avec le Conseil des Mohawks de Kahnawake de manière à assurer une coordination efficace des travaux.



*Le démantèlement du Kathryn Spirit a débuté il y a quelques semaines. L'opération de découpage - en cours sur la photo - permettra de récupérer le métal à des fins de revente*

Martin Blouin  
Garde côtière canadienne

## Helicopter Training Course

Do you use helicopters from oceanographic research vessels?

Then you are encouraged to join a helicopter ditching course in Halifax on June 15th following the 2018 CMOS Congress.

Helicopters are frequently used on research vessels to transport personnel during: 1) crew changes and 2) dedicated science operations. All personnel who utilize helicopters from oceanographic research vessels are encouraged to complete a recognized Helicopter Ditching Course. The aim of this course is to provide offshore helicopter passengers with the emergency response procedures and skills to effectively react to a helicopter-ditching emergency over water.

In preparation for the 2018 Amundsen cruise, ArcticNet has organized a 1-day helicopter training course to coincide with the CMOS Congress Halifax June 10-14. The course will be tailored to personnel operating from helicopters on the Amundsen and other Canadian Coast Guard vessels, but anyone utilizing helicopters is welcome to attend.



Photo Credit - Falck Safety Services Canada



Photo Credit - Falck Safety Services Canada

A Helicopter Ditching Course is strongly recommended for: Science personnel who will only be using the helicopter for ship to shore transfers during crew changes.

A Helicopter Ditching Course is MANDATORY for: Science personnel who will be using Canadian Coast Guard helicopters to conduct dedicated science operations such as, but not limited to: sea-ice sampling, melt-pond sampling, ice beacon deployments, accessing land for sampling, etc.

Details: Course: Helicopter Underwater Egress Training (HUET)

Company: Falck Safety Services (<http://www.falck.ca/en/>)

Where: Halifax (Dartmouth), Nova Scotia

Date: 15 June 2018

Cost: \$800/person

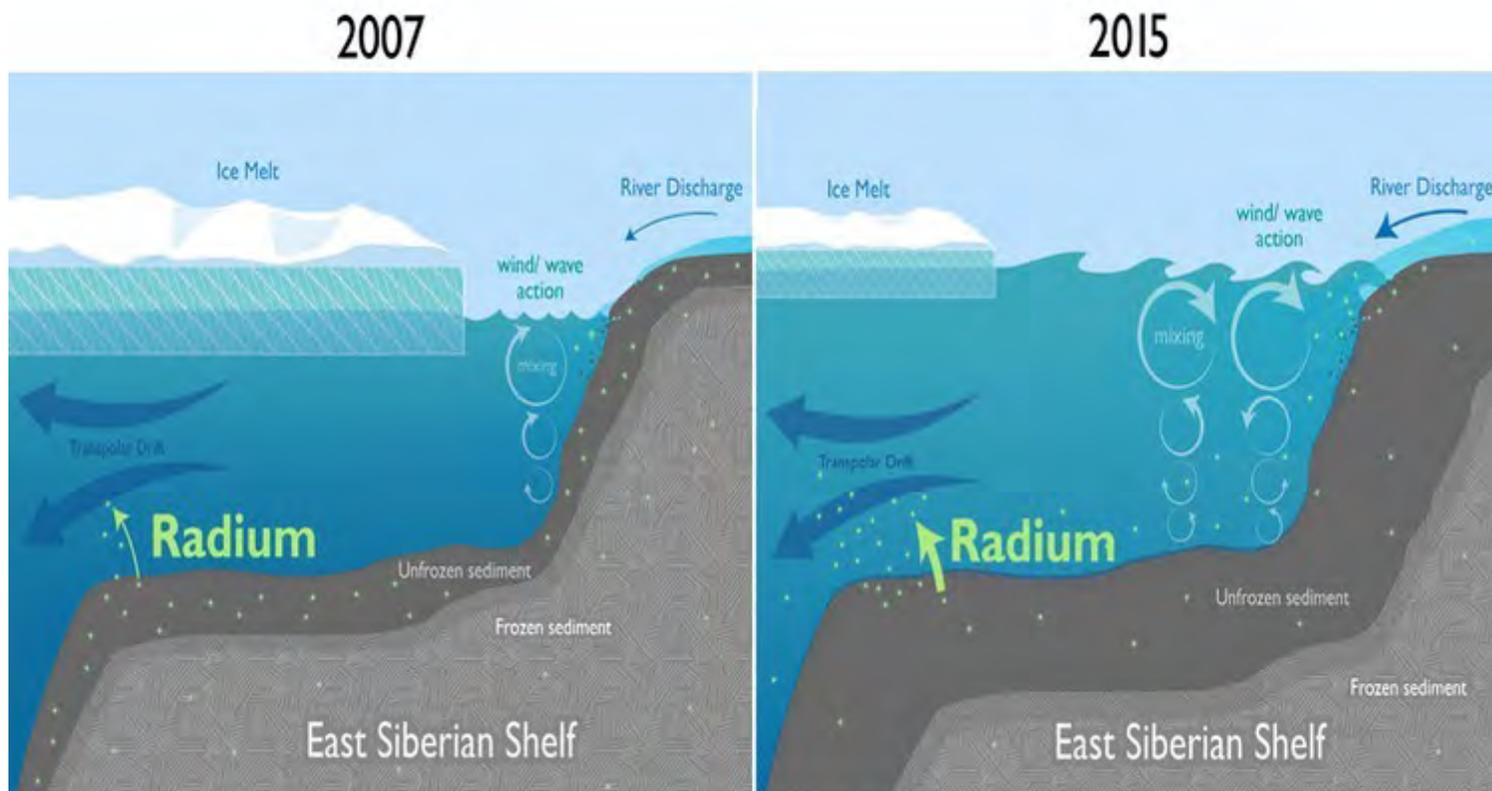
If you are interested, please contact Anissa Merzouk ([Anissa.Merzouk@arcticnet.ulaval.ca](mailto:Anissa.Merzouk@arcticnet.ulaval.ca)) as soon as possible.

## Climate Change induced spectacular increase of the land-ocean inputs in the Arctic Ocean

From [GEOTRACES eNEWSLETTER n°27, January 2018](#)

Measurements of radium-228 ( $^{228}\text{Ra}$ ) in the framework of the 2015 U.S. GEOTRACES Arctic Transect ([GN01](#)), revealed that the surface water content of this tracer has almost doubled over the last decade, specifically in the Transpolar Drift near the North Pole.

Radium isotopes are excellent tracers of land-ocean inputs. A mass balance model for  $^{228}\text{Ra}$  allowed Kipp and co-workers (2018, see reference below) to suggest that this increase is due to an intensification of shelf-derived material inputs to the central basin. These coastal changes, in turn, could also be delivering more nutrients, carbon, and other chemicals into the Arctic Ocean and lead to dramatic impacts on Arctic food webs and animal populations.



**Figure:** Diminishing sea ice near the Arctic coast leaves more open water near the coast for winds to create waves. The increased wave action reaches down and stirs up sediments on shallow continental shelves, releasing radium and other chemicals that are carried up to the surface and swept away into the open ocean by currents such as the Transpolar Drift. Artwork: Natalie Renier, Woods Hole Oceanographic Institution.

Reference: Kipp, L. E., Charette, M. A., Moore, W. S., Henderson, P. B., & Rigor, I. G. (2018). Increased fluxes of shelf-derived materials to the central Arctic Ocean. *Science Advances*, 4(1), eaao1302. DOI: <http://doi.org/10.1126/sciadv.aao1302>

*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](mailto: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](mailto:david.greenberg@dfo-mpo.gc.ca)*

## MEETINGS

### 52nd CMOS Congress

Halifax, June 10-14, 2018

#### Marine and Environmental Risks and Impacts

The [Congress website](#) has lots of new information for people attending the meeting. Note that the final Thursday includes a full day of talks; the congress does not end midday as in past years.



You can now [register](#). **The deadline for Early Bird registration is April 30.** Remember, students can join CMOS for free and save on registration.

You can [book your hotel](#). **Deadline for reservations is May 9 or May 11** depending on your hotel choice.

There are associated sub meetings.

**GOES-R Workshop:** Open to all, a workshop is being held on Sunday June 10 for an additional fee of \$50.00. Further details are available [here](#). You may register to attend this

workshop without registering for the Congress. **MEOPAR:** The [Annual Training Meeting](#) (June 12-13) and [Annual Science Meeting](#) (June 14-15) are being held in parallel with the CMOS Congress. These meetings are only open to MEOPAR personnel. There is no charge.

The Canadian Meteorological and Oceanographic Society (CMOS) offers scholarships to students in atmospheric sciences, meteorology, climate, oceanography and related fields (e.g., mathematics, hydrology, limnology). The graduate scholarship is \$5,000 (with an option for a 2nd year). Information about these scholarships and how to apply can be found at <http://www.cmos.ca/site/scholarships>. You do not have to be a member of the Society to receive a scholarship. The application **deadline** for the graduate scholarship is **April 20**.

### 12th Bay of Fundy Science Workshop

Agricultural Campus, Dalhousie University, Truro, NS, May 9-12, 2018

The 12th Bay of Fundy Ecosystem Partnership Science Workshop will be held 9-12 May 2018, at the Cox Institute, Agricultural Campus, Dalhousie University, Truro, NS. The Workshop will bring together individuals from around the Bay of Fundy and beyond with an interest in various aspects of integrated ocean, coastal and watershed management. Together we will explore the conference theme: **“A Changing Fundy Environment”** with an exciting agenda of plenary discussions, technical breakouts, an interactive poster session and field trips. Response from the Bay of Fundy science, management, university and NGO community to the call for contributions to the Workshop has been outstanding. There will be two keynote talks - Thursday, May 10<sup>th</sup> - Dr. Kimberley T.A. Davis, Dalhousie University, “An Uncertain Future: the Right Whale’s Fight Against Environment, Biology and Ocean Urbanization”; Friday, May 11<sup>th</sup> - Dr. Graham Daborn, Acadia University, “Reflections on the Bay of Fundy and its Future”.

[Details](#)



## Coastal Zone Canada 2018 Conference

**Memorial University, St. John's, Newfoundland and Labrador, July 15<sup>th</sup> to 19<sup>th</sup>, 2018.**

The theme for the 2018 Coastal Zone Canada Conference is "Seeking Practical Solutions to Real Issues; Communities Adapting to a Changing World".

Coastal areas are extremely dynamic environments, which require almost constant adaptation and resilience from coastal communities. The aim of the conference is to examine how these changes can be viewed as benefits and opportunities, rather than as threats. To accomplish this, the Conference will be organized around a series of general topics of interest for Integrated Coastal Zone Management, as well as the local geographic region.



Throughout the conference, three sub-themes will be explored, including:

- Change and Challenge - Realizing Opportunity
- Engagement and Collaboration - Examples from the Field
- Tools and Technologies - Practical Applications

[Details](#)

**Deadline** for abstracts **March 31 2018.**

*Please send meeting announcements to  
David Greenberg,  
[david.greenberg@dfo-mpo.gc.ca](mailto:david.greenberg@dfo-mpo.gc.ca)*

*SVP faites parvenir vos annonces de réunion à  
David Greenberg,  
[david.greenberg@dfo-mpo.gc.ca](mailto:david.greenberg@dfo-mpo.gc.ca)*

## POSITIONS AVAILABLE

### Tenure-track positions - Assistant Professor, Associate Professor or Professor Acoustics and Oceanography or Materials Science

#### Department of Physics and Space Science, RMC, Kingston, Ontario

The Royal Military College is a bilingual university offering undergraduate and graduate programs in the humanities, sciences and engineering to members of the Canadian Forces and civilians. Members of the Department of Physics and Space Science are involved in a wide range of research in the fields of: Acoustics and Oceanography (numerical modelling of oceans and lakes, remote sensing of arctic waters), Materials Science (optical materials and photonics, high-energy laser/matter interactions, non-destructive evaluation), and Space Science (astronomy and astrophysics, ionospheric physics and space weather, nanosatellite payload and mission design, remote sensing, surveillance of space).



The Department of Physics and Space Science offers B.Sc. degrees in Physics and in Space Science, as well as M.Sc. and Ph.D. degrees in physics with specializations in Acoustics and Oceanography, Materials Science and Space Science. The typical teaching load of an indeterminate faculty member is comprised of four undergraduate or graduate lecture courses, plus one undergraduate laboratory, per annum. In addition to teaching graduate and senior undergraduate courses in their area of expertise, faculty members of the department may be expected to teach any junior undergraduate courses in the program, in the language(s) of their position.

[Details](#) **Closing date: 6 April 2018 - 23:59, Pacific Time**

### Post Doc Marine Environment Forecasting

#### MAST, University of Liège Belgium

A 2-year post doc position is available at the Modelling for Aquatic Systems research group ([MAST](#)) of the University of Liège, Belgium. MAST is devoted to the development of ocean numerical models for understanding, forecasting and managing the ocean. The post doc will have to work on the research and development part of the biogeochemical operational model of the Black Sea. He/she will have to make the necessary adaptations and fine tuning of an existing biogeochemical model (BAMHBI for Biogeochemical Model for Hypoxic and Benthic Influenced Areas) (already run in operational) in lines with new expectations and for further fine tuning the quality of the results.



**Modelling for  
Aquatic Systems**



How to Apply: The candidate should send as soon as possible by e-mail his/her curriculum vitae, a covering letter of motivation, together with two references (name and email address), to Marilaure Grégoire (email: [mgregoire@ulg.ac.be](mailto:mgregoire@ulg.ac.be)) with copy to [oceanphys@ulg.ac.be](mailto:oceanphys@ulg.ac.be). Applications

will be considered until the position is filled.

[Details](#)

## Poste en océanographie chimique

### L'Institut des sciences de la mer de Rimouski (ISMER), Rimouski, Québec

L'Institut des sciences de la mer de Rimouski (ISMER), un centre de recherche multidisciplinaire en océanographie, est à la recherche d'un nouveau professeur en chimie marine. Le candidat choisi devra être spécialisé en chimie inorganique marine. Les domaines d'expertise recherchés sont les biogéocycles marins, la nanochimie environnementale marine, ou les isotopes stables comme traceurs, les estuaires et les environnements côtiers. Il sera encouragé à développer son propre secteur de recherche

et sera amené à collaborer avec les géologues, les physiciens et les biologistes de l'ISMER et de l'UQAR. La personne retenue devra être en mesure de participer aux programmes de maîtrise et de doctorat en océanographie par l'encadrement d'étudiants aux cycles supérieurs. La langue de travail est le français.

#### [Détails](#)

La **date limite** de candidature est le **13 avril 2018** pour une prise de fonction en juin 2018.

### Tenure Track Faculty Position in marine chemistry

#### L'Institut des sciences de la mer de Rimouski (ISMER), Rimouski, Québec

The Institut des Sciences de la Mer de Rimouski (ISMER), is looking for a candidate to fill a regular faculty position in marine chemistry, specialized in inorganic marine chemistry. The candidate's expertise should include in estuaries and coastal environments systems, marine biogeochemistry, stable isotopes or environmental nanochemistry. The successful candidate should demonstrate expertise in field research. He/she will be encouraged to develop his/her own research program, and collaborate with biologists, chemists, physicists and geologists from the Institute and the University. He or she must be able to contribute to the M.Sc. and PhD programs through teaching and graduate student supervision. Working language is French. While all applications will be considered, with equal qualifications, priority will be given to candidates able to work in French.

#### [Details](#)

The **deadline** for application is **April 28, 2017**. The function is expected to begin on June 2018.



The logo for UQAR, consisting of the letters 'UQAR' in a large, bold, blue font.

Université du Québec  
à Rimouski

## Physical Science Research Professional - Biogeochemistry

### School of Earth, Energy & Environmental Sciences, Stanford University

The Marine Biogeochemistry Laboratory at Stanford University is seeking a Research Assistant for laboratory management and project-based research. Projects in the lab focus on marine nitrogen cycle biogeochemistry largely using stable isotope techniques. In addition to the following essential job functions around lab management, it is expected that the candidate will contribute to specific research projects by performing and assisting with experiments, training new students and personnel,



STANFORD  
UNIVERSITY

maintaining safety records, and remaining current with new procedures and related research through ongoing literature review. Travel and field work opportunities may be available.

[Details](#) Review of applications starts March 15, but will be accepted until the position is filled. Target start date is June or July.

## Postdoc - trace metals in Southern African and Antarctic coastal ocean

### Department of Earth Sciences, Stellenbosch University, Western Cape, South Africa

Postdoctoral research fellow position to study bioactive trace elements to understand seasonal cycling of trace metals in Southern African and Antarctic coastal oceans: The Trace Metal Experimental and Biogeochemistry Group (TracEx) within the Department of Earth Sciences, Stellenbosch University, Western Cape, South Africa, invites applications for a postdoctoral position. The broader research project examines the biogeochemical cycling of iron, copper and zinc and their link in controlling primary productivity. The postdoctoral fellow will apply geotracers to understand cycling and interaction of trace nutrient with phytoplankton to study Southern African and Antarctic coastal regions. Thus, preference will be given to applicants with expertise in clean room techniques and biogeochemistry of trace metals linked to physics of the ocean. Added experience in biogeochemical modelling, and knowledge of GIS and remote sensing will be advantageous. The position will require fieldwork, participation in Southern Ocean cruises and travel, therefore physical fitness and ability to work long hours in harsh conditions is a prerequisite.



[Details](#)

The position is for 24 months, commencing from June of 2018, applications accepted until filled.

## Full Professorship in Marine Biogeochemistry and Ecology

### Department of Bioscience, Aarhus University, Denmark

The successful candidate must be able to develop ecological models based on experimental set up in field studies and laboratory experiments as well as from spatio-temporal data obtained through ecological monitoring programs. The research shall support the Departments' leading role in providing advice to the Danish authorities on environmental issues, and dissemination of research results to managers, politicians and other stakeholders is an important task linked to the position. Hence, the applicant is expected to acquire the Danish language both spoken and written, as relevant courses will be offered.



Research and advisory activities at the department are project-driven with a solid tradition in cross-disciplinary research and strong team collaboration. Thus, we are looking for a candidate with proven collaborative skills and the ability to enrich the scientific environment in the Department by initiating and coordinating new research initiatives (e.g. EU H2020 and FP9, ERC, Danish national funding) and by strengthening the department's scientific network internationally as well as nationally.

[Details](#)

**Deadline** for applications: **April 15 2018**

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

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

## GENERAL

### 2018 Call for SCOR Working Group Proposals

SCOR is now accepting proposals for new SCOR working groups. Proposals are due by 12:00 p.m. UCT on 16 April 2018. Proposals will be posted after that time on the [2018 SCOR annual meeting Website](#) and open to review by national SCOR committees and others until 1 August 2018. Decisions about which proposals will be funded will be made at the annual SCOR meeting on 4-6 Sept. 2018 and new groups will start in 2019.

[Download call for proposals here](#)



### POGO-SCOR Visiting Fellowships

The [Partnership for Observation of the Global Oceans \(POGO\)](#) and [Scientific Committee on Oceanic Research \(SCOR\)](#) are pleased to announce that the [POGO-SCOR Visiting Fellowship programme](#) for 2018 is now open for applications.

The program is designed to promote training and capacity building leading towards a global observation system for the ocean, and is aimed at scientists, technicians, graduate students (preferably PhD) and post-doctoral fellows involved in oceanographic work at centres in developing countries and countries with economies in transition.

All applications should be made via the [marinettraining.eu](http://www.marinettraining.eu) website, at:

<http://www.marinettraining.eu/POGOSCOR18>.

The **deadline** for applications is **9 April 2018**.



### NSERC Synergy Prizes

NSERC is looking for nominations for its Synergy Awards. These awards for Innovation honour outstanding research and development (R&D) partnerships between a university or a college, and industry, in the natural sciences and engineering. Since 1995, the Awards have showcased the benefits of pooling university and industry resources to make the most of Canadian research excellence and Canadian industrial expertise. The nominated partnership must be in the natural sciences and/or engineering and be between a Canadian university professor, or group of professors, or a Canadian college, and a Canadian-based company or companies with commercial activities in Canada, such as R&D and/or manufacturing. The University winners (principal nominee) in each of three category will receive a \$200,000 NSERC research grant. Industrial partners will each receive a \$30,000 voucher valid towards the cash portion of their required contribution in a new Collaborative Research and Development Grant (CRD). Details of the grant and the nomination process can be found at:

[http://www.nserc-crsng.gc.ca/Prizes-Prix/Synergy-Synergie/About-Apropos\\_eng.asp](http://www.nserc-crsng.gc.ca/Prizes-Prix/Synergy-Synergie/About-Apropos_eng.asp).

The **deadline** for nominations is **April 16, 2018**.



## IMBeR ClimEco6 Summer School - Interdisciplinary approaches for sustainable oceans

**Gadjah Mada University, Yogyakarta, Indonesia  
August 1-8, 2018**

The ecological goods and services provided by the oceans are critical to human welfare. However, sustainable management of these resources is of concern given the complex and dynamic social-ecological systems in which they are embedded. As the effects of both natural and anthropogenic impacts are projected to intensify, it is clear that successful marine resources management for human well-being and ecological sustainability, will require more holistic governance approaches that consider the social and ecological dimensions in tandem. The success of holistic marine governance is underpinned by the provision of interdisciplinary science that integrates both the social and natural sciences, to decision-makers. To this end, the ClimEco6 Summer School aims to contribute to the development of the next generation of interdisciplinary marine researchers. Drawing on the expertise of lecturers from the natural, social and economic sciences, participants will develop a strong theoretical and applied understanding of each discipline, and how they can be integrated to solve some of the challenges facing the oceans. To complement this, participants will also gain practical skills in science communication and how to operate at the science-policy-society interface, so that they can more effectively influence the decision-making process relating to the marine environment.



Post-graduate students (Masters and PhD) and early-career scientists (< seven years post PhD) with an interest in topics such as, oceanography, biogeochemistry, fisheries, climate change and social and economic aspects of marine ecosystems are encouraged to apply. It will also be of considerable interest to those who want to find out more about practical ways to deal with the challenges arising from working across social and natural science disciplines. Because of the hands-on nature of the summer school, and to facilitate good discussions and interactions, the number of participants will be limited to 60. We aim to have participants from a wide geographic and disciplinary distribution.

Complete the [Application Form](#) and submit it together with a short CV (in English, no more than two pages!) before **26 March 2018**. Applicants will be selected on their research interests and experience, and their reasons and motivation for wanting to attend the summer school.

## A.G. Huntsman Award for Excellence in the Marine Sciences

The A.G. Huntsman Award is presented annually by the Royal Society of Canada to recognize excellence of research and outstanding contributions to marine sciences. Until 2013, the A.G. Huntsman Award had been presented in one of three categories on a rotating basis: Marine Geoscience, Physical/Chemical Oceanography, or Biological Oceanography and Fisheries Science. Recognizing there is often a considerable degree of overlap among these fields of study, more recent awards have no such categorical distinction and are simply awarded for excellence in marine sciences. The intent is not to exclude candidates that focus on single disciplines, but to acknowledge that some research defies such categorization, since it spans multiple disciplines. The overarching aim is to find and recognize truly exceptional marine scientists.



Nomination information is available at <http://www.huntsmanaward.org/Nomination.htm>.  
The deadline for nominations is April 15, 2017.

The deadline for receipt of letters-of-intent is **March 31, 2018**, sent to the Chair of the Selection Committee - Professor Susan Allen Department of Earth, Ocean and Atmospheric Sciences, University of British Columbia - [sallen@eos.ubc.ca](mailto:sallen@eos.ubc.ca).

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

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

Newsletter #100 will be distributed in **May 2018**.

Please send contributions to David Greenberg  
[david.greenberg@dfo-mpo.gc.ca](mailto:david.greenberg@dfo-mpo.gc.ca)

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Le Bulletin #100 sera distribué en **mai 2018**.

Veillez faire parvenir vos contributions à David Greenberg, [david.greenberg@dfo-mpo.gc.ca](mailto:david.greenberg@dfo-mpo.gc.ca)

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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.

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