



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

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OCEAN SCIENCE PROGRAMS

Marine Environmental Observation Prediction and Response (MEOPAR)

Submitted by Douglas W.R. Wallace, MEOPAR Scientific Director, Dalhousie University (douglas.wallace@dal.ca)

Context - Changing Ocean Risks

The marine environment presents humankind with great economic opportunities coupled to major risks. While this has been the case throughout history, the modern human relationship with the ocean is impacted by a confluence of environmental change on one hand, and new economic and societal opportunities associated with changing uses of the marine environment on the other (Figure 1). This confluence creates some new risks, and is altering the patterns and significance of other existing risks.

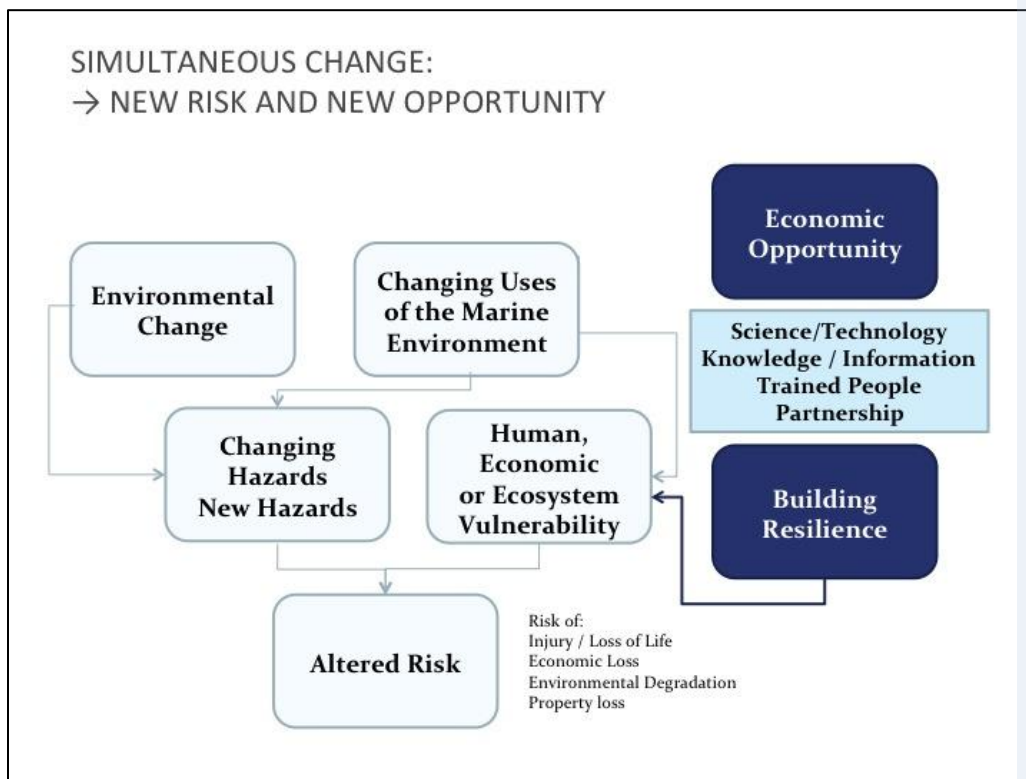


Figure 1. The societal, environmental and economic context for MEOPAR.

“Our future depends on an informed relationship with the ocean.”

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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.

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.

Humankind’s relationship with the ocean is the premise and context for the Marine Environmental Observation Prediction and Response (MEOPAR) Network: a national research network initiated in 2012 as one of a family of Networks of Centres of Excellence or “NCEs.”

Supported by the Government of Canada, NCEs solve critical issues that require a collaborative approach and wide-ranging research expertise. The NCEs are academic-led, but are intended to be multidisciplinary and involve partners from industry, government and not-for-profit organizations. NCEs aim to “enable Canadian researchers and students to work with receptor communities to accelerate the creation and application of knowledge.” In other words, NCEs are very different from traditional funding instruments for academic research.

MEOPAR’s vision is to: “deliver knowledge, technology, and people to enable Canada’s communities and industry to enhance resilience and economic opportunity through an informed relationship with the changing marine environment.”

The MEOPAR Network

Managed by a Board of Directors, MEOPAR is a not-for-profit corporation with a corporate centre, hosted by Dalhousie University in Halifax. MEOPAR has a projected lifetime of 15 years and its present, first funding cycle (2012-2017) is supported by \$25 million from the NCE program, as well as substantial partner contributions. These funds are allocated to a variety of programs (Figure 2) with the majority allocated to the Research Program. MEOPAR’s activity is guided by a strategic plan developed in close cooperation with the Board, and with advice from an independent International Scientific Advisory Committee. Responsibility for evaluation of the Research Program lies with MEOPAR’s Research Management Committee.

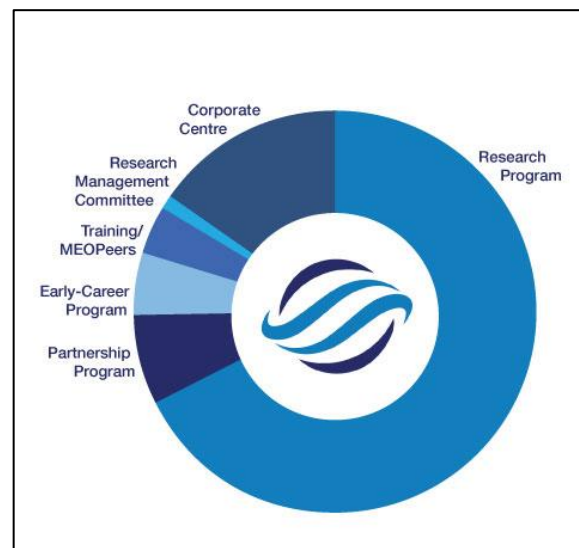


Figure 2. MEOPAR funding allocations.

MEOPAR Research

Research Projects: Typically, projects involve multiple investigators addressing research topics from a multidisciplinary perspective. These integrated projects are organized under two themes distinguished by timescale: **Theme 1** addresses issues with timescales of hours to a season, whereas **Theme 2** covers seasons to decades. Most are funded according to a 3+2 year model. Projects receive an initial 3 years of funding, and can apply for an additional 2 years, based on a mid-term review.

Projects are selected through *Open Calls for Proposals* organized by MEOPAR’s Research Management Committee. An important selection criteria has been *user engagement* in both the formulation and conduct of the research. While MEOPAR supports fundamental research, it also places a strong emphasis on knowledge mobilization and research should be focussed on results that users want and will use. Another key criterion has been multidisciplinary. MEOPAR seeks to lower barriers between researchers in the natural and social sciences and sees opportunities for new, important areas of research and training emerging at the interface between these two broad disciplinary areas.

At present, MEOPAR supports seven integrated projects under Theme 1, and six under Theme 2. For a complete overview of our research projects, visit <http://meopar.ca/our-research/>.

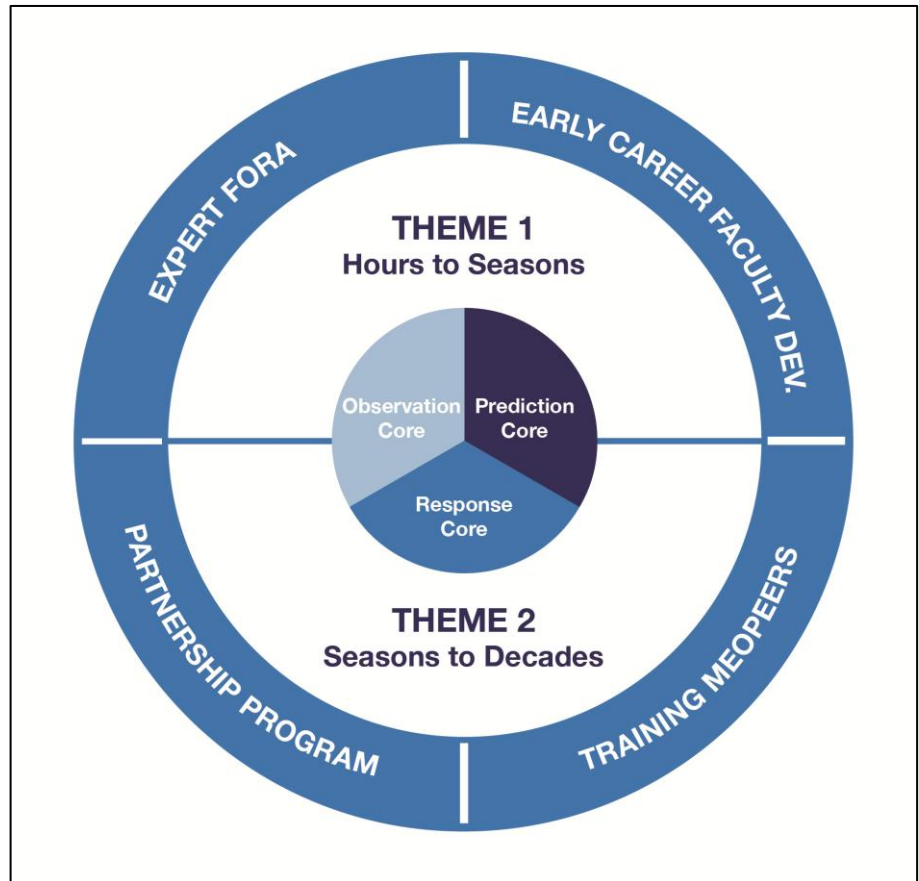


Figure 3. MEOPAR program overview.

Research Cores: MEOPAR’s projects require access to common technical expertise, new technologies and models, shared approaches, etc. Cross-cutting activities and expertise are supported by MEOPAR’s Observation and Prediction Cores. MEOPAR is developing a third Response Core to support social and economic aspects of the research program.

Early-Career Faculty Development Program: MEOPAR is growing its researcher network, not only in terms of numbers, but also in terms of the breadth of available expertise. A funding program targeting new researchers recently awarded \$1.2 million to 12 early-career investigators. MEOPAR is working with these investigators to integrate them, as appropriate, into the activities of existing projects and cores.

MEOPeer Training Program: Education and training of the next generation of highly qualified people (HQP) is a major role of the network. MEOPAR provides a range of training opportunities to engage the network’s students and postdocs, or **MEOPeers**, in activities that cut across projects (e.g. career development, training on project management, statistical programming, etc.). The MEOPeer network is self-organising and has its own program of online and regional meetings, as well as active participation in broader MEOPAR committees and events.

Partnership Program: MEOPAR promotes research and knowledge mobilization partnerships with organisations beyond academia that are impacted by marine risks or that can provide tools or capacity to address such risks. This includes industry, all levels of government, NGOs, First Nations, community groups, and associations.

The Partnership Program has a special role in incorporating stakeholders' needs, perspectives and capabilities into MEOPAR's activities.

The Partnership Program has 3 components:

- 1. Workshops:** MEOPAR supports workshops that involve both academic researchers and non-academic partners. These might focus on knowledge mobilization from existing MEOPAR projects or can be used to generate ideas for new areas of MEOPAR research.
- 2. Expert Fora:** These bring together Canadian and International researchers and experts for intensive discussions about policy-relevant issues and research. Typically, a forum involves a policy outreach event or activity. MEOPAR held its first Expert Forum on Ocean Acidification in February 2015 and a 2nd forum is planned to address Ocean Data Management in fall 2015.
- 3. Project Partnerships:** MEOPAR can co-fund projects that are initiated or motivated outside of academia. These should involve active participation in the research by partner organization investigators and/or cash or in-kind contributions. The latter may be in the form of equipment donation, equipment use, data provision, or sharing of facilities.

For more information about MEOPAR, please visit our web page at www.meopar.ca, follow us on Twitter (@MEOPAR_NCE) on LinkedIn (www.linkedin.com/company/meopar), or contact our Corporate Centre.

Call for New SCOR Working Groups Proposals

The SCOR Secretariat is accepting proposals for new working groups from now until 15 June 2015. Information about the operation of working groups can be found on SCOR's website ([click](#)).

SCOR approves new working groups each year at its annual meeting. The number of proposals funded depends both on the results of the proposal review process and the availability of funding. In recent years, one to three new working groups have been approved in any given year. SCOR is an organization that promotes science that comes from the "bottom up" in the ocean science community, and working groups are an important vehicle to bring attention to the important ocean science issues identified by the global community of ocean scientists.

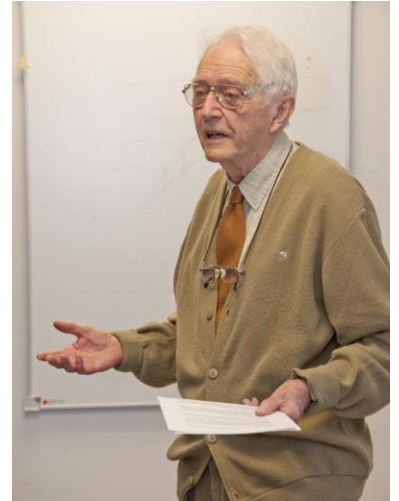
A new proposal can come from any individual or group of individuals. The guidelines and a template are available [here \(click\)](#). Each proposal will be evaluated by national SCOR committees in terms of scientific merit and quality, timeliness, and achievability of the proposed terms of reference.

PERSONEL

Alan Longhurst Celebrates his 90th Birthday at Bedford Institute of Oceanography

Submitted by Bill Li, Bedford Institute of Oceanography

On March 5, 2015, Dr. Alan Longhurst marked his 90th birthday. During his time at the Bedford Institute of Oceanography (BIO), Alan was Director of Marine Ecology Laboratory (1977-1979), Director-General of DFO Ocean Sciences and Surveys Atlantic/Institute Director (1979-1986), and senior Research Scientist, Biological Oceanography Division (1986-1995). Among Alan's many enduring achievements (see table below), two landmarks have eponymous stature: his invention of the Longhurst-Hardy Plankton Recorder, and his intellectual innovation of the Longhurst ocean provinces. Alan is a Fellow of the Royal Society of Canada, and the recipient of the ASLO Lifetime Achievement Award. In retirement, Alan is proprietor of Galerie l'Acadie (Cajarc, France) and continues a remarkable and unabated contribution to the scientific literature. Many friends and colleagues came to greet Alan with best wishes and marvelled at his many accomplishments, past and present. In presenting Alan with a bottle of well-aged malt whiskey from Cape Breton, Michael Sinclair remarked that the gift is to highlight that Alan has become an exceptionally well-aged Nova Scotian.



ERA	PERIOD	EPOCH	YEAR	AGE	EVENT		
Alan Longhurst	Pre-BIO	Formation	1925	0	Born		
			1948	23	released from Armed Forces		
			1952	27	Bedford College, University of London		
		Exploration	1954	29	1st paper: Reproduction in Notostraca (Crustacea). Nature 173:781-782		
			1955	30	1st monograph: A Review of the Notostraca. Bulletin British Museum 3:1-57		
						West African Fisheries Research Institute, Freetown, Sierra Leone	
			1957	32	3rd paper: Density of marine benthic communities off West Africa. Nature 179:542-543		
			1960	35	Federal Fisheries Service, Lagos, Nigeria		
			1963	38	Scripps Tuna Oceanography Research group, Institute of Marine Resources, SIO		
			1966	41	LHPR: A new system for the collection of multiple serial plankton samples. DSR, 13:213-222		
			1967	42	Director, Southwest Fisheries Science Center, US NMFS, La Jolla		
			1972	47	Institute for Marine Environmental Research, Plymouth		
			BIO	Administration	1977	52	Director, Marine Ecology Laboratory
					1979	54	Director-General, OSS Atlantic, DFO
	1981	56			BIOSTAT: An Experiment in Ocean Plankton Ecology		
						"Analysis of Marine Ecosystems", Academic Press	
	1985	57			The structure and evolution of plankton communities. PIO 15:1-35		
						Relationship between diversity and the vertical structure of the upper ocean. DSR 32:1535-1570	
	1986	61			end: Director-General, OSS Atlantic, DFO		
	Innovation	1987			62	"Ecology of Tropical Oceans", Academic Press	
		1988			63	Vertical nitrogen flux from the ocean photic zone by diel migrant zooplankton and nekton. DSR 35:881-889	
							Fellow Royal Society of Canada
		1989		64	The biological pump: Profiles of plankton production and consumption in the upper ocean. PIO 22:47-123		
		1990		65	Vertical flux of respiratory carbon by oceanic diel migrant biota. DSR 37:685-694		
		1991		66	Role of the marine biosphere in the global carbon cycle. L&O 36:1507-1526		
		1992		67	Submicron particles in Northwest Atlantic shelf water. DSR 39:1-7		
		1995		70	Seasonal cycles of pelagic production and consumption. PIO 36:77-167		
					An estimate of global primary production in the ocean from satellite radiometer data. JPR 17:1245-1271 retired DFO		
	Post-BIO	Consolidation		1997	72	ASLO Lifetime Achievement Award	
				1998	73	"Ecological Geography of the Sea", 1st ed., Academic Press, Elsevier	
			1999	74	Does the benthic paradox tell us something about surplus production models? Fish Res 41:111-117		
			2001	76	A major seasonal phytoplankton bloom in the Madagascar Basin. DSR-I 48:2413-2422		
			2002	77	Murphy's law revisited: longevity as a factor in recruitment to fish populations. Fish. Res. 56:125-131		
			2003	78	The symbolism of large marine ecosystems. Fish. Res. 61:1-6		
			2006	81	The sustainability myth. Fish. Res. 81:107-112		
			2007	82	"Ecological Geography of the Sea", 2nd ed., Academic Press, Elsevier		
Argumentation			2010	85	Doubt and certainty in fishery science: Are we really headed for a global collapse of stocks? Fish. Res. 86:1-5		
			2010	85	"Mismanagement of Marine Fisheries", Cambridge University Press		
2015		90	"Doubt and Certainty in Climate Science" (in preparation)				

EVENT KEY
MILESTONE
PAPER
BOOK
AWARD
EXPERIMENT

MEETINGS

2015 CMOS Tour Speakers / Conférencier Itinérants SCMO

This year, both CMOS tour speakers are addressing ocean sciences issues.

Dr. Kumiko Azetsu-Scott (Bedford Institute of Oceanography) is speaking on *Ocean Acidification*. Her tour is already in progress and concludes 27 March.

Dr. Charles Hannah (Institute of Ocean Sciences) will be speaking on the *World Class Tanker Safety Initiative* from 10 to 17 April.

More information on the speakers as well as the complete schedule are available on the CMOS website <http://cmos.in1touch.org/site/speakers>.

Cette année, les sujets de présentation des deux conférenciers itinérants SCMO concernent les sciences de l'océan.

Dr. Kumiko Azetsu-Scott (Institut océanographique de Bedford) discute l'*Acidification des océans*. Cette tournée a débuté le 2 mars et se termine le 27 mars.

Dr. Charles Hannah (Institut des sciences de la mer) présentera un aperçu de la composante océanographique de l'*Initiative pour la sécurité des pétroliers de classe mondiale* 10 to 17 April.

Pour plus d'information consultez le site web de la SCMO ([cliquer ici](#)).

AGU Joint Meeting / Réunion conjointe AGU, Montréal, 3-7 May/Mai 2015

The 2015 Joint Assembly will be held Sunday through Thursday, 3-7 May 2015 at the Palais des congrès de Montréal, Viger Street West, Montreal. This meeting covers the entire Earth and space science spectrum and is cosponsored by AGU, CGU, GAC, and MAC. For more information, visit the meeting website <http://ja.agu.org/2015/>

La Réunion conjointe AGU 2015 aura lieu au Palais des congrès de Montréal, rue Viger ouest, Montréal. Cette réunion couvre la gamme complète des géosciences et sciences spatiales. Pour plus de détails consultez le [site web \(cliquer ici\)](#).

HAB and Climate Change Symposium, Göteborg, Sweden 19-22 May 2015

A Symposium titled, "Harmful Algal Blooms and Climate Change" co-sponsored by **PICES-GEOHAB/IOC-SCOR-ICES** will be held in Göteborg, Sweden from May 19-22, 2015. For more details visit the symposium website ([click here](#)). The deadline for abstract submissions is 1 April 2015.

IUGG General Assembly / Assemblée générale de l'IUGG, Prague, 22 June - 2 July

The 26th IUGG General Assembly will be held in Prague from 22nd June to 2nd July. There are numerous atmospheric and oceanographic sessions. Further details can be found at the web-site: <http://www.iugg2015prague.com/>.

La 26ème assemblée générale de l'IUGG aura lieu à Prague du 22 juin au 2 juillet. Il y aura plusieurs sessions atmosphériques et océanographiques. Plus de détails sont disponibles au site web: <http://www.iugg2015prague.com/>.

CANADIAN JOBS and TRAINING

Oceanographic / Meteorological Technician

[Amec Foster Wheeler](#), St. John's Newfoundland, is seeking an intermediate to senior level Oceanographic / Meteorological Technician able to develop and execute marine and terrestrial environmental monitoring programs on behalf of Project Managers. Activities may include mooring systems design, deployment & recovery, equipment maintenance, calibration and related technical support, all within a culture of industry-leading health, safety, and environmental standards. [Click here](#) for more info.

Research Associate - Observational Physical Oceanography

The Department of Earth, Ocean, and Atmospheric Sciences ([EOAS](#)) at the University of British Columbia (UBC) invites applications for the position of full-time Research Associate in Physical Oceanography. The appointment will be for 1 year initially and may be renewed for one additional year. The anticipated start date is 1 April 2015. [Click here](#) for more information.

Fully funded workshop opportunity for early career scientists

A fully funded workshop opportunity for early career scientists is offered by the EU project FixO3 (www.fixo3.eu) The workshop, "A Practical introduction to marine monitoring hardware and procedures", to be held 15-17 September 2015 in Trieste, Italy, is a three-day hands-on practical workshop involving exposure to some of the latest precision ocean monitoring sensors and equipment at OGS (Istituto Nazionale di Oceanografia e di Geofisica Sperimentale).

Registration deadline is 30 April 2015. More information, including the workshop agenda and registration can be found on the workshop page: <http://www.fixo3.eu/training-opportunities/workshop-2/>

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

GENERAL

Arctic Change 2014: Another resounding success

Originally published in the CMOS Bulletin SCMO Vol.43, No. 1, February 2015

Over 1400 people recently converged on the Ottawa Shaw Centre for the Arctic Change 2014 conference. This was the annual meeting hosted by the Networks of Centres of Excellence – ArcticNet. However, this year's



event was much larger as they welcomed participants from around the globe to Canada's capital from December 8 - 12. The conference participation was truly global and reflects a world-wide scientific interest in the Arctic. There were over 300 non-Canadians in attendance, from 22 countries. Nations such as the United States, Germany, Norway, Russia, France, the United Kingdom, Republic of South Korea, and Japan had a presence. In addition, it was truly a pan-Canadian event, as there were over 1,000 Canadians in attendance from all of the provinces and territories. I heard the story that the most common surname amongst the registrants was not Smith, Jones, or even Fortin, rather it was Pokiak! The Pokiak family name is a common one from the region near Inuvik, NWT.

Arctic Change was a resounding success with hundreds of excellent scientific posters, sessions, exhibits, and plenary speakers. The week started off with Student Days where the ArcticNet Student Association organized sessions and hands-on workshops. These ranged from workshops dealing with scientific writing, communicating your science, working with media, to panel discussions on collaboration with communities on Arctic research. During this same time, there were several side-meetings occurring amongst other participants. There was a Canada-European Union (EU) workshop where presentations and discussions explored possible areas of priority and collaboration. This meeting was followed on Tuesday with a broader international workshop where research opportunities were explored between Canada and global partners. Initiatives that were stimulating a lot of excitement included the ongoing work and recent call for proposals from Canadian High Arctic Research Station, as well as the EU funded initiative *EU-PolarNet* that is just getting organized. Several countries presented efforts on current and future Arctic S&T priorities, including the U.S.A, Sweden, Norway, Finland, UK, France, Germany, Italy, Korea, and Japan. It was evident that Arctic research and monitoring is truly a global priority.

All of the above workshops and discussions took place BEFORE the Arctic Change conference even started! Arctic Change was launched on Wednesday, December 10 with morning plenary speakers each day followed by concurrent scientific sessions – in fact, over fifty scientific sessions were held during the conference and over 350 scientific posters were displayed. Topics were wide ranging from education, health and well-being in Arctic communities, to permafrost landscapes in transition, to Arctic security, to wildlife co-management, changing commercial and subsistence fisheries. Of interest to the oceanographic and meteorological community were the following sessions (just a sampling amongst the dozens that were held): Arctic Ocean Acidification, Arctic Sea Ice, Changing Arctic Atmospheric Composition, Monitoring Arctic Ecosystems, Physical Forcing and Ecosystem Response in the Pacific Arctic Region, Safe and Sustainable Shipping, and Understanding the Role of Ocean, Sea-Ice and Atmosphere in Arctic Climate. There were several sessions on Arctic data management practices and moving from data to knowledge through data archives and online access tools. In addition, the sessions that

examined the Changing Practices towards community engagement in Arctic Research were popular as lessons learned and best practices were shared.

As Canada's two-year chairmanship of the Arctic Council comes to an end in April-May 2015, there were discussions of work achieved during this time and the transitioning of the chairmanship to the USA. The forthcoming American chairmanship will work within the theme of *One Arctic: Shared Opportunities, Challenges, and Responsibilities*. The following priorities are emerging within this theme: Addressing Impacts of Climate Change in the Arctic, Stewardship of the Arctic Ocean, and Improving Economic and Living Conditions of Northerners.

After a busy and productive five days, it was evident that our scientific understanding of the Arctic is increasing but that a great deal of research and monitoring needs to continue. The conference provided numerous networking events and opportunities for informal exchange amongst participants. There will no doubt continue to be dialogue and collaborative opportunities emerging over the coming months as a result of the Arctic Change conference.

NOTE: If you enjoyed reading this article, please consider subscribing to the CMOS Arctic Special Interest Group's newsletter for more feature stories on Arctic science. For further information on the newsletter, please contact Ann McMillan at mcmillan@storm.ca

Helen Joseph

CMOS Member, Ottawa Centre

2015 A.G. Huntsman Award - Call for Nominations

The A. G. Huntsman Foundation is inviting you to submit a nomination for the 2015 A. G. Huntsman Award for Excellence in Marine Sciences. Please refer to the call letter ([click here](#)) which provides background information about the award. The nomination form can be downloaded from here ([click](#)). The deadline for submissions is 10 April 2015.



NSERC Synergy Awards for Innovation / Prix Synergie pour l'innovation

The deadline for nominations to the Synergy Awards for Innovation is 15 April 2015. The awards honour outstanding research and development partnerships between a university or a college, and industry, in the natural sciences and engineering.

[Click here](#) for more details

La date limite de présentation des mises en candidature pour les Prix Synergie pour l'innovation est le 15 avril 2015. Les Prix Synergie pour l'innovation reconnaissent des partenariats de recherche et développement qui se distinguent, entre les universités ou les collèges et l'industrie canadienne dans le domaine des sciences naturelles et du génie. [Cliquer ici](#) pour plus d'information.

Call for Nominations / Appel de mise en candidature - Médaille Martin Bergmann Medal

Established by the [Royal Canadian Geographical Society](#) in 2012, the Martin Bergmann medal recognizes achievement for “excellence in Arctic leadership and science”. It celebrates “Marty” Bergmann, a public servant with an outstanding talent for networking that led him to connect scientists with resources and technology, to inspire business leaders, explorers and innovators towards new goals and to consider and attempt to meet the challenges inherent in opening up the Arctic.



Nominations for the Martin Bergmann Medal may be made by any Canadian. The deadline is **30 June**. For more information on this award please consult the web site of the Society ([click here](#)).

[La médaille Martin Bergmann](#), créée en 2012 par la Société géographique royale du Canada ([SGRC](#)), récompense des réalisations liées à « l'excellence en leadership et sciences dans l'Arctique ». Elle commémore le souvenir de « Marty » Bergmann, un fonctionnaire dont l'immense talent pour le réseautage a permis de mettre en relation des scientifiques avec des ressources et la technologie en plus d'inciter des dirigeants d'entreprise, des explorateurs et des innovateurs à poursuivre de nouveaux objectifs et à tenter de relever les défis propres à l'ouverture de l'Arctique.

Tout Canadien peut proposer une candidature pour la médaille Martin Bergmann. La date limite est le **30 juin**. Pour plus de détails veuillez consulter le site web de la société ([cliquer ici](#)).

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

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Newsletter #82 will be distributed in May 2015.
Please send contributions to Michel Mitchell,
michel.mitchell@dfo-mpo.gc.ca

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michel.mitchell@dfo-mpo.gc.ca

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