



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

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GENERAL:

- **No submissions**

Research Scientist - Arctic Physical Oceanographer

Department of Fisheries and Ocean, Institute of Ocean Sciences

Closing Date: December 1, 2008

We have an opening for full time continuing appointment for an Arctic Physical Oceanographer (SE-RES-01 to SE-RES-05). DFO jobs are posted on <http://jobs.gc.ca> and this particular job is posted at: <https://psjobs-emploisfp.psc-cfp.gc.ca/psr/applicant/applicant.jobOppSearchResult;jsessionid=ZdyKLqkQJ3v4DLkgZNHLDt5sN1JxYpnGjYPn9pPLBWpvPSqlm1yP!-1958904160?toggleLanguage=en&psrsMode=1&poster=61604&noBackBtn=true>

Reference Number: DFO08J-006661-000564

Request Number: F0873R05417

A few things to note about this posting:

1. This is an external posting (open to people who are not currently part of the Public Service), but any current Public Service employees are permitted (in fact, encouraged) to apply.
2. We will consider hiring at any of the SE-RES levels. For appointments from outside the Public Service, the appointment level offered would be based on the experience and qualifications of the applicant.
3. The rules of the Public Service require that priority be given to Canadian citizens. If you are not a citizen, you are still free to apply and if you are interested, you probably should do so.

The current specific opening is for a physical oceanographer with Arctic experience and expertise. That being said, we may choose to use the pool of qualified candidates established to fill other positions. Candidates who are wondering if they experience "fits the bill" are encouraged to apply

PhD Student Position Available, Modeling CO₂ Fluxes in the Arctic

The Canadian Centre for Climate Modelling and Analysis (CCCma) at the University of Victoria, in British Columbia, Canada, seeks a PhD student to work on modeling CO₂ fluxes in the Arctic environment. The successful candidate will initially be working within the ArcticNet project "Effects of Climate Change and Carbon Exchange Dynamics in Arctic Coastal and Marine Ecosystems," which addresses how the ocean's response (physical, biogeochemical and biological) to climate change and variability will affect the atmosphere-ocean cycling of CO₂.

It is planned to extend a 1-D coupled atmosphere-ocean-biogeochemical model by adding to an existing snow-sea ice-ice-algae model and updating the planktonic ecosystem to be representative for arctic conditions. The extended 1-D model will be used to parameterize for example the effects of surfactants and fresh water plumes, gas exchange through ice, and calcium carbonate precipitation within sea-ice. Specific objectives are to see how components of the marine cryosphere interact to generate air-sea fluxes and to provide an assessment of how CO₂ exchange dynamics will respond to climate change. An extension to 3D is anticipated (if feasible) to simulate carbon budgets and determine whether newly developed parameterizations are capable of responding to a changing climate.

The applicant is expected to be able to work in a team and should have a background in ocean or atmospheric physics or biogeochemistry. For additional information contact:

Nadja Steiner, Phone: 250-36-31433

Email: nadja.steiner@ec.gc.ca

Ken Denman, Phone: 250-363-8230

Email: ken.denman@ec.gc.ca

Visiting Fellowship: Remote Sensing of Ocean Color

Freshwater Institute, Department of Fisheries and Oceans Canada

The Department of Fisheries and Oceans Canada offers a visiting fellowship for a postdoctoral position in remote sensing of ocean color. The successful candidate will work on refining and developing algorithms for the application and mapping of primary production estimates from ocean color data in the Arctic. The position is located in Winnipeg, Manitoba. Candidates should hold a PhD in marine sciences or remote sensing and have experience with the use and application of ocean color remote sensing data. Candidates with a background in polar marine research and experience at sea in biological oceanography data collection, including primary production, are encouraged to apply. Primary responsibilities will include analysis of Arctic ocean color data (SeaWiFS, MODIS, MERIS), ground-truthing of primary production estimates, ship-based or camp-based data collection, and mapping of ocean color derived estimates.

More information about the fellowship program can be found at:

http://www.nserc.gc.ca/sf_e.asp?nav=sfnv&lbi=3d Applications will be accepted until the position is filled. Candidates should send a CV and letter of intent via email to:

Dr. Christine Michel, christine.michel@dfo-mpo.gc.ca

Dr. Pierre Larouche, pierre.larouche@dfo-mpo.gc.ca

GEOTRACES in Canada

Report by Roger François, rfrancois@eos.ubc.ca

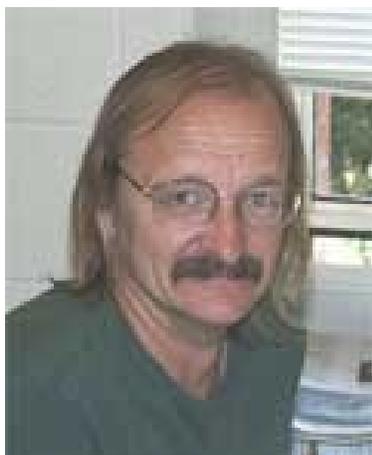
The GEOTRACES program is an emerging international program (<http://www.ldeo.columbia.edu/res/pi/geotraces/>) whose main goals are (i) to identify and quantify the processes that control the distribution of trace elements and isotopes (TEIs) in the ocean, (ii) to document their role as regulators and recorders of important biogeochemical and physical processes that control the structure and productivity of marine ecosystems, the dispersion of contaminants in the marine environment, the level of climatologically important trace gases in the atmosphere, and global climate, (iii) to establish the sensitivity of TEIs to changing environmental conditions, and (iv) to develop their potentials as paleoceanographic proxies recording past ocean conditions in marine sediments.

To initiate GEOTRACES in Canada, a group of 11 investigators encompassing a range of chemical and biological expertise (J. Cullen, D. Varela [U.Vic.]; R. Francois, K. Orians, M. Maldonado, P. Tortell [UBC]; C. Holmden [U. Sask.]; A. Mucci [McGill]; M. Kienast, H. Thomas [Dalhousie]; R. Rivkin [Memorial]) has received funding from the International Polar Year program for a project entitled “GEOTRACES: Multi-tracer investigation of the effect of climate change on nutrient and carbon cycles in the Arctic Ocean”. The group will conduct field work in the Beaufort Sea during summer 2009 onboard the CCGS Amundsen to investigate the impact of climate change on the nutrient and carbon cycle in the Arctic Ocean. In particular, they will (i) investigate the impact of warming and ice melting on the input, removal and cycling of key trace elements and isotopes which act as micronutrients (Fe, Cu, Zn, Cd) or tracers of sources or processes (Al, Ba, Mn, ²³⁰Th, ²³¹Pa, Cr isotopes, Si isotopes), (ii) use this information to elucidate the effect of climate change on the productivity, carbon cycling, and trace gas

emissions in the Beaufort Sea, (iii) develop isotopic tracers (^{230}Th , ^{231}Pa , Si isotopes, Cr isotopes) and organic biomarkers as paleoproxies for paleoceanographic reconstruction of particle flux, nutrient utilization, marine productivity, terrigenous input, sea surface temperature and sea surface salinity.

This study will provide a better understanding of how reduced ice cover affects micronutrient supply, marine productivity, phytoplankton taxonomy, and carbon fluxes, which is much needed to predict the impact of climate change on the socio-economic sustainability of northern Canadians communities, the future carbon sequestration capacity of the Arctic Ocean, and the addition of climatologically active gases in the atmosphere.

Roger Francois to receive the 2008 A.G. Huntsman Award



The Huntsman Foundation is pleased to announce that the winner of the 2008 A.G. Huntsman Award is Dr. Roger Francois for his groundbreaking research and leadership in marine geochemistry. The medal will be presented to Dr. Francois **Thursday November 27**, starting at 14:00, in the main auditorium of the Bedford Institute of Oceanography, Halifax, Nova Scotia. More details on the ceremony will follow later.

Dr. Francois holds a Canada Research Chair in the Department of Earth and Ocean Sciences, University of British Columbia. Dr. Francois obtained his PhD from the University of British Columbia in 1987 and spent the subsequent fifteen years of his career at the Department of Marine Chemistry and Geochemistry at the Woods Hole Oceanographic Institution, where he is still an adjunct scientist. He has been actively involved in large international programs with a biogeochemical focus, such as JGOFS and GEOTRACES.

Dr. Francois' research is centered at the intersection of physical, chemical and biological processes and has influenced our understanding of climate-related changes in ocean circulation and ocean chemistry. His research has focused partly on the global carbon, nitrogen and silica cycles (past and present), and more recently on the global biogeochemical cycling of metals. He has been particularly innovative in applying novel techniques to address processes that have occurred in the past million years. Specifically, he has developed the use of light stable isotopes for understanding algal production and nutrient cycling in the ocean, and for determining past changes in water column stratification. Additionally, he has developed tracers that have paved the way for the reconstruction of past ocean circulation and its impact on global climate and his innovative techniques for measuring sedimentation processes are being used to explore the history of sediment burial. Dr. Francois is internationally renowned for his deeply insightful research in marine biogeochemistry, his innovative skill in data acquisition and analysis, and his interpretation of the complex behaviour of the ocean-atmosphere system over long-term climatic timescales.

CMOS Annual Congress in 31 May - 4 June, 2009 in Halifax

The theme for the CMOS Annual Congress is: *Sea and Sky Come to Life Mer et ciel s'animent*
Preliminary details for the Congress may be found at <http://www.cmos.ca/Congress2009/>

JOINT ASSEMBLY OF INTERNATIONAL SCIENCE ASSOCIATIONS TO BE HELD IN MONTREAL, JULY 2009

In July 2009, there will be a Joint Assembly meeting in Canada of three major international science organizations: the *International Association of Physical Science of the Oceans*, the International Association of Meteorology and Atmospheric Sciences, and the International Association of Cryospheric Sciences. The theme of the Joint Assembly is Our Warming Planet.

The name of the Joint Assembly for the three international Associations has been shortened to **MOCA '09**, to reflect the first letters of the science areas: **M**eteorology, **O**ceanography and **C**ryospheric Associations meeting 2009. **MOCA '09** will be held from July 19-24, 2009 in downtown Montreal. Early estimates are that there may be upwards of 2,000 international participants at the assembly.

The oceanographic scientific program at the IAPSO portion of **MOCA '09** is being developed under the direction of the IAPSO President, Dr. Lawrence Mysak, McGill University, and the Executive Secretary, Dr. Johan Rodhe, Goteborg University. Scientific sessions are wide ranging from Effects of climate change on nearshore coastal environments; Ocean mixing processes; Deep ocean exchange with the shelf; Physics and chemistry of oceans; and more. As well, Joint Sessions will be held addressing topics such as International Polar Year-early results; Arctic Ocean circulation and sea ice; Observations of high latitude climate change; Climate model intercomparison; and more.

Further information on **MOCA 09**, including how to submit abstracts, registration details, etc, can be found on-line at <http://www.moca-09.org/index.asp>

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Previous newsletters may be found on the CNC/SCOR web site.
Les bulletins antérieurs se retrouvent sur le site web du CNC/SCOR.

Newsletter #40 will be distributed on December 11, 2008. Please send contributions to dick.stoddart@sympatico.ca
Bulletin #40 sera distribué le 11 décembre 2008. Veuillez faire parvenir vos contributions à dick.stoddart@sympatico.ca

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