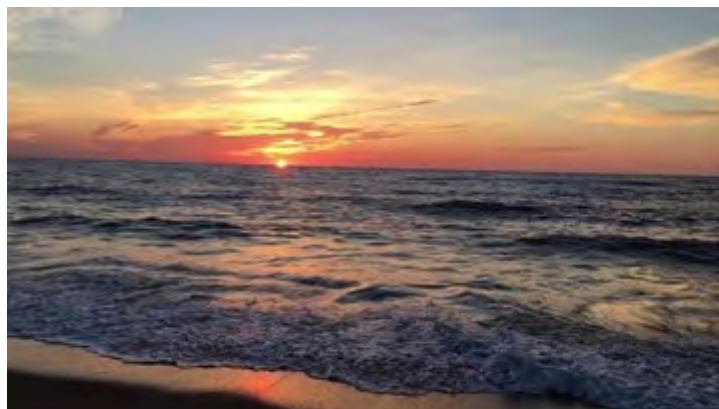


CANADIAN OCEAN SCIENCE NEWSLETTER
LE BULLETIN CANADIEN DES SCIENCES DE L'OcéAN
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Bulletin numéro 119, juillet 2021

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Xianmin Hu - CNC-SCOR Early Career Ocean Scientist Award Winner

Our CNC-SCOR Early Career Ocean Scientist Award was presented to Dr. Xianmin Hu of Dalhousie University at the CMOS Congress virtual awards ceremony. Excerpts from nomination letters (below) illustrate why he is a very good choice.

"Over more than one decade, Dr. Xianmin Hu has maintained a high standard on ocean model development and research and made significant contributions to Canadian oceanography."

"The nomination is based on Dr. Hu's high standard in modelling and analysis. He has coauthored 35 papers in peer reviewed journals and has made an outstanding contribution to the development of many NEMO configurations in Canada. He is a resourceful, knowledgeable, insightful and skilled ocean and sea ice modeller."

"I would say that it would be hard to find someone with Xianmin's expertise with numerical modelling (especially at this stage of his career), understanding of high latitude ocean circulation, and work ethic."

Dr. Hu describes some of the work he has been involved in in the article below.
Congratulations Xianmin.



Freshwater processes in the Arctic and Subarctic Seas: A research journey of an ocean modeller

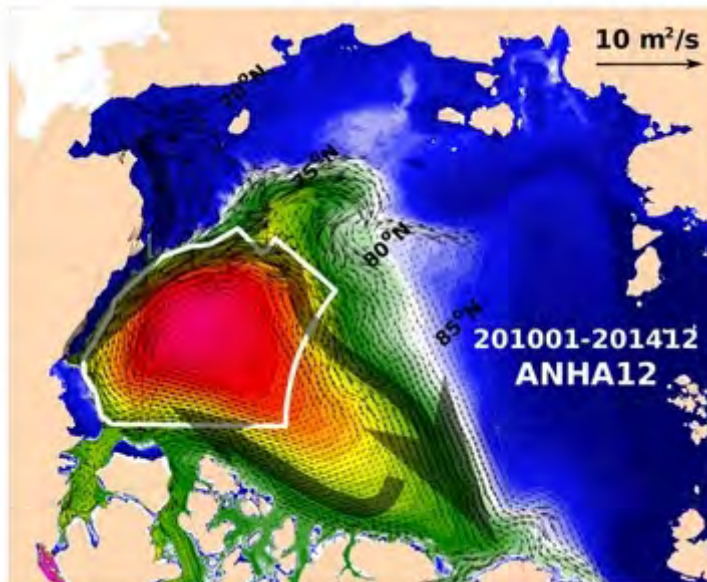
Xianmin Hu

Department of Oceanography, Dalhousie University

The ocean is known to be salty but that salt is not evenly distributed in space or constant in time. The concept of freshwater is commonly used to quantify the relative difference in salinity. For a given water sample, freshwater is defined as the amount of pure freshwater that must be extracted or added to reach a reference salinity. Compared to salinity, freshwater is more closely linked to water stratification. In the cold polar oceans, the vertical-density-layer structure is dominated by salinity rather than temperature. Hence, freshwater processes play a crucial role in the dynamics of the upper Arctic Ocean.

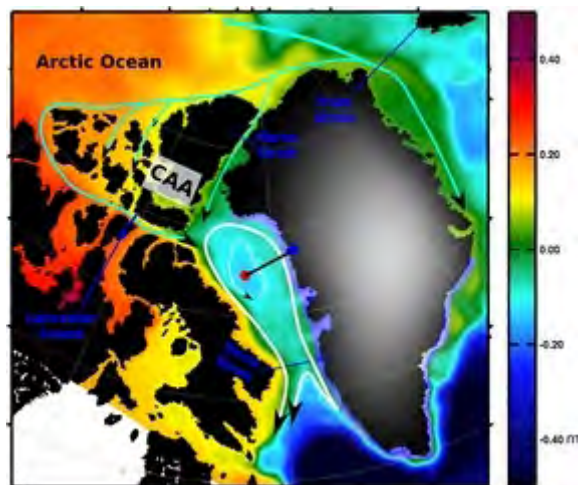
In the Arctic Ocean, although many observations have been conducted in the past, they are still not sufficient to understand the system as a whole. Furthermore, some of our knowledge in this region could be biased by observations being mostly available in summer and over short periods. These characteristics of the observational data do not allow us to update the knowledge fast enough to catch up with the pace of the rapid-changing Arctic. In this context, numerical modelling is a feasible approach to fill the gap. More importantly, the numerical model is also a valuable tool for process studies.

My freshwater process journey began with investigating the Pacific Water pathways within the Arctic Ocean during my Ph.D. program under the supervision of Paul G. Myers at the University of Alberta. We conducted a high-resolution (at that time) pan-Arctic coupled ocean and sea-ice simulation under the climatology state, and found a pronounced freshwater loss within the Canada Basin during model spin-up. This loss of freshwater was not good news to an ocean modeller but it provided an opportunity to study the circulation changes under different freshwater scenarios. With modelled ocean velocities, we used offline Lagrangian floats to track the circulation pattern of Pacific Water within the Arctic Ocean (Hu et al., 2013). Two routes were revealed for Pacific Water leaving the Arctic Ocean either from Fram Strait or the Canadian Pacific Water circulation pattern (black arrows) and Arctic Archipelago (CAA) channels. One route follows the Transpolar Drift and the other one follows along the northern coast of Alaska. The latter route, however, is very weak during the high freshwater accumulation, i.e., a strong Beaufort Gyre (BG) occupying the Canada Basin. This is not in accord with many online maps of Arctic Ocean circulation and raises the question of what is the case in the real world. Observations show that freshwater has been accumulating within the BG since the beginning of this century, classifying it as a strong BG particularly after 2007. We did a follow-up study for the period of 2002-2016 using an online passive tracer, which can track watermass more accurately and takes into consideration the effect of mixing in the model (Hu et al., 2019). With many observed features reproduced in the new simulation, it proved that our previous findings were robust: when a strong BG exists most of the Pacific Water circulates with a basin-scale anti-cyclonic pattern within the Arctic Ocean, i.e., following the Transpolar Route rather than the Alaskan Route. At the same time, we also demonstrated the necessity to use a high spatial resolution to capture the realistic upper ocean dynamics in the Canada Basin. Our studies also suggest that the relationship between the Pacific Water pathway and BG freshwater content is not a “chicken-and-egg” type of problem as BG is strongly influenced by the atmospheric circulation and the availability of other freshwater sources, e.g., sea-ice melting and continental river discharge.



For details see Hu et al. (2019)

follows along the northern coast of Alaska. The latter route, however, is very weak during the high freshwater accumulation, i.e., a strong Beaufort Gyre (BG) occupying the Canada Basin. This is not in accord with many online maps of Arctic Ocean circulation and raises the question of what is the case in the real world. Observations show that freshwater has been accumulating within the BG since the beginning of this century, classifying it as a strong BG particularly after 2007. We did a follow-up study for the period of 2002-2016 using an online passive tracer, which can track watermass more accurately and takes into consideration the effect of mixing in the model (Hu et al., 2019). With many observed features reproduced in the new simulation, it proved that our previous findings were robust: when a strong BG exists most of the Pacific Water circulates with a basin-scale anti-cyclonic pattern within the Arctic Ocean, i.e., following the Transpolar Route rather than the Alaskan Route. At the same time, we also demonstrated the necessity to use a high spatial resolution to capture the realistic upper ocean dynamics in the Canada Basin. Our studies also suggest that the relationship between the Pacific Water pathway and BG freshwater content is not a “chicken-and-egg” type of problem as BG is strongly influenced by the atmospheric circulation and the availability of other freshwater sources, e.g., sea-ice melting and continental river discharge.



Impact of Greenland meltwater on Baffin Bay ocean circulation (colors show modelled sea surface height in the control run). For details see Castro de la Guardia et al. (2015).

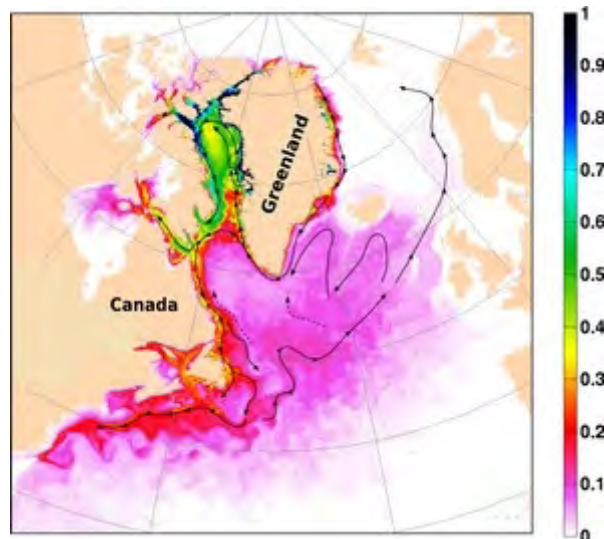
Atlantic Meridional Overturning Circulation, we investigated its impact on the nearby Baffin Bay

The second leg of my journey is associated with the freshwater input from the Greenland Ice Sheet (GrIS). Unlike previous studies that focused on its climatic importance on the large-scale oceanic response, e.g.,

Atlantic Meridional Overturning Circulation, we investigated its impact on the nearby Baffin Bay

and Arctic outflows. This is essential because the CAA channels have been recognized as the main gateway for the Arctic Ocean liquid freshwater outflows. Our studies showed that the enhanced meltwater from the GrIS into the ocean can trigger a local positive feedback loop: more coastal freshwater input can strengthen the Baffin Bay gyre circulation and then lead to the lifting of intermediate warm water, which potentially feeds the fjords with more heat and triggers more melting of GrIS (Castro de la Guardia et al., 2015). We also found that the enhanced GrIS meltwater can affect the partition of Arctic Ocean outflow, shifting more flows through the Fram Strait rather than the CAA channels (Hu, 2013). As GrIS meltwater is still missing in many present pan-Arctic ocean numerical simulations, this should be taken into account in studies on the future outflow of today's observed record-high Arctic freshwater.

The third part of my journey is related to continental discharge, and it is more technical. To present, including realistic runoff with inter-annual variation in an ocean model is less common than we think, partly due to technical difficulties. For this reason, I developed a semi-automatic and interactive runoff remapping tool to feed the ocean model with more realistic continental freshwater input, not only in a fashion of volume-conserved but also being placed at proper locations. In practice, it builds a bridge between river discharge products produced by land-surface models and ocean models. The tool was used for remapping naturalized and regulated runoff which helped in studying the impacts of river dams (Ridenour et al. 2019). Additionally we used it to include the GrIS meltwater from high-resolution ice sheet surface mass balance model (Gillard et al., 2016) and placing iceberg calving at the right locations (Marson et al., 2018). We confirmed that it does matter to have the GrIS meltwater distributed at the right places. We found that it is mainly the meltwater from east Greenland that can reach the interior of the Labrador Sea within a decade while meltwater from west Greenland predominantly accumulates in the Baffin Bay before being exported south down the Labrador shelf (Gillard et al., 2016).



Greenland meltwater pathways (colors show the vertical integrated meltwater passive tracer concentration). For details see Gillard et al. (2016).

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Faits saillants du Québec-Océan

de [Infolettre | Juin 2021](#)

Plongeurs

La formation en plongée scientifique de l'Association Canadienne des Sciences Subaquatiques s'est déroulée début mai à Pointe-au-Père. Donnée par Katie MacGregor et Filippo Ferrario de l'U. Laval ainsi que Manuela Voisine d'Explos-Nature, cette formation marque le début de plusieurs projets d'études avec plongée scientifique, menés par des étudiant.e.s et des enseignant.e.s de l'UQAR-ISMER. Dans une eau à deux degrés Celsius et une visibilité à moins de deux mètres, les participants ont appris à plonger de façon sécuritaire dans un contexte de recherche. L'attention aux autres et l'esprit d'équipe sont les valeurs cardinales qui guident les pratiques de cette activité. Les entraînements se poursuivront afin d'être prêts pour les échantillonnages de cet été, autour de Rimouski et de Pointe-Ouest à Anticosti.

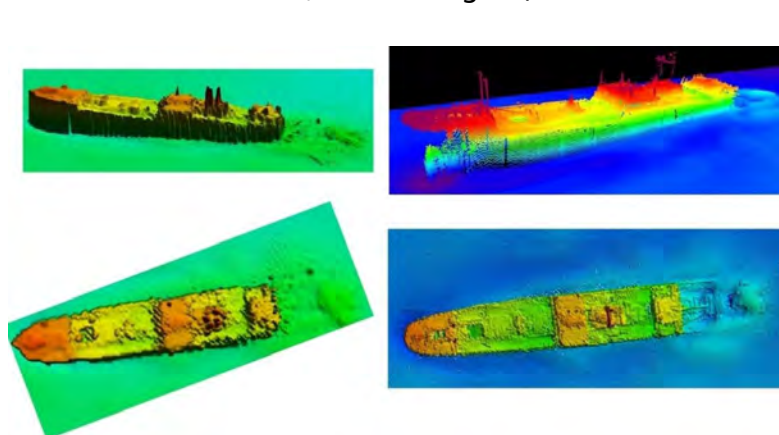


L'équipe des plongeurs scientifique à Pointe-au-Père au complet, à deux mètres de distance, le dernier jour de la formation. Photo : inconnu

Déploiement AUV

Du 1er au 15 mai dernier, à bord du navire de recherche Coriolis II, l'AUV Hugin (Autonomous Underwater Vehicle) a été déployé pour documenter les formes sédimentaires et les concentrations d'oxygène dans le fond du chenal Laurentien, entre Rimouski et Sept-Îles, dans le cadre du projet « Imagerie sous-marine à haute résolution de la morphosédimentologie et de l'hypoxie dans le chenal Laurentien, l'estuaire et le golfe du Saint-Laurent ». L'AUV a permis aussi d'obtenir des images à une résolution sans précédent de plusieurs épaves situées dans cette zone. Ce projet, financé par le programme Odyssée St-Laurent du Réseau Québec Maritime (RQM), est mené en collaboration entre les équipes de l'U. Laval (Patrick Lajeunesse, Marcel Babin, Marie-Hélène Forget, Guislain Bécu, Achim Randelhoff, Philippe Archambault), l'ISMER-UQAR (Gwénaëlle

recherche Coriolis II, l'AUV Hugin (Autonomous



L'épave du Vulcano sous l'œil de Huglin ! Le Vulcano est un cargo à vapeur construit en 1913 qui a fait naufrage le 18 octobre 1927, au large de Sainte-Luce. Photo : © U.Laval, CIDCO, Amundsen Science

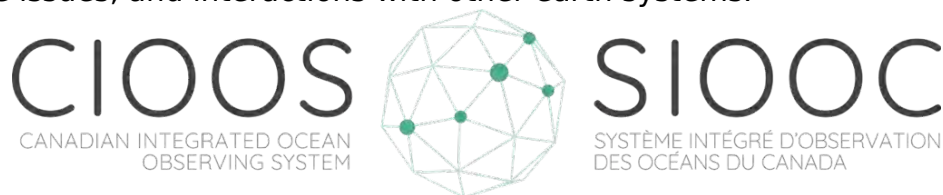
Chaillou), l'Institut de Recherche en Histoire Maritime et en Archéologie subaquatique (Vincent Delmas), le Centre de Développement et de Recherche en Imagerie Numérique (Isabelle Cayer) ainsi que la Commission Géologique du Canada (Alexandre Normandeau) et Amundsen Science (Daniel Amirault).

Vous pouvez découvrir des images de l'AUV lors de ces plongées et quelques premiers résultats avec cette [vidéo](#) réalisée par l'ingénieur Éric Steele de la compagnie Kongsberg.

The Canadian Integrated Ocean Observing System

The [Canadian Integrated Ocean Observing System \(CIOOS\)](#) is an open-access national system that brings together the various elements of ocean observation in Canada. It facilitates access to existing resources, new information, and technology and makes data discoverable.

CIOOS captures a selection of **Essential Ocean Variables (EOVs)** aligned with the [Global Ocean Observing System \(GOOS\)](#), contributing to global efforts of better understanding the ocean, marine issues, and interactions with other earth systems.



CIOOS is the result of a successful collaboration between various institutional and non-governmental partners located in the [Pacific](#), the [St. Lawrence](#), and the [Atlantic](#). Three Regional Associations (RAs) work closely with local oceanographic communities and organizations to meet the end-user needs. Ocean observations produced through regional networks are essential to effective ocean management. Therefore, the regional associations are actively engaged in their communities in collecting reliable and high-quality data and in continuously improving services offered by CIOOS to support evidence-based decision making.

The CIOOS mission is to improve national coordination and collaboration between diverse ocean data sources as well as improve the access and discoverability of information for better decision making. We provide support for a wide variety of economic sectors and research efforts to understand, monitor, and manage activities in the marine and coastal environments.

In future issues we will highlight the work of the regional partners.

Shipping in Marine Protected Areas

A toolkit for reducing shipping impacts in marine protected areas

Canada's existing marine protections do not adequately consider or mitigate the impacts of shipping, leaving marine life to contend with a number of stressors, including underwater noise, ship strikes, and vessel discharges, even in areas designated as protected.



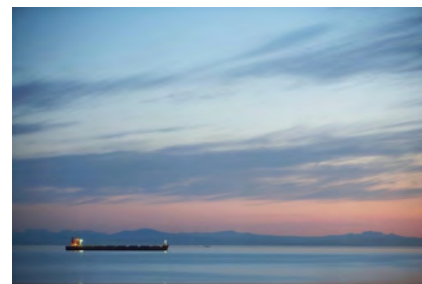
Together, WWF-Canada, West Coast Environmental Law and East Coast Environmental Law have produced a toolkit to share the impacts of shipping in marine protected areas (MPAs) and identify the tools that MPA practitioners and shipping experts can use to reduce those impacts in Canada.

What WWF-Canada and partners are doing

There are two main reasons why most MPAs in Canada have not adequately addressed the risks posed by shipping. The first is that the science around shipping impacts on the marine

environment is growing, and the second is that many practitioners require a better understanding of the complex legal and regulatory environment that exists for shipping in Canada.

To address these barriers, we have commissioned and conducted a number of reports which are included in this toolkit. From documenting the impacts of shipping on wildlife and habitats to outlining the legal framework for shipping in MPAs and analyzing the opportunities for using existing legal tools to reduce shipping impacts, to studying case studies on reducing shipping impacts in MPAs, the full reports and a quick reference guide are available in the toolkit below.



- [Quick Reference Guide](#)
- [Impacts of Shipping on Marine Birds](#)
- [Impacts of Shipping on Benthic Habitats](#)
- [Shipping Through Sea Ice: Impacts on Marine Habitats and Best Practices](#)
- [Mitigating Shipping Impacts on Cetaceans in Canada: Lessons Learned and Best Practices](#)
- [Navigating the Law: Reducing Shipping Impacts in Marine Protected Areas](#)
- [Shipping in Marine Protected Areas Toolkit Workshop Summary Report](#)
- [Reducing Impacts From Shipping in MPAs: Evaluating Tools for Monitoring And Compliance](#)
- [Reducing Impacts From Shipping in St. Anns Bank MPA: Atlantic Case Study](#)
- [Reducing Impacts From Shipping in Scott Islands Marine National Wildlife Area: Pacific Case Study](#)

This material was presented in a [webinar](#) hosted by The Canadian Marine Shipping Risk Forum (CMSRF) June 24, 2021.

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,
davidgreenberg@alumni.uwaterloo.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,
davidgreenberg@alumni.uwaterloo.ca*

MEETINGS

Stommel Symposium

Woods Hole Mass, September 27, 2021 (on site and virtual)

Henry Stommel would have been 100 years old on September 27, 2020. As one of the most productive and stimulating physical oceanographers of all time, many of his former colleagues, students, and friends are planning to mark the occasion by meeting in Woods Hole on Monday, September 27, 2021. The idea is to both inform younger generations of his remarkable accomplishments and to remind working scientists of how much he contributed to our ongoing science.



In their introduction to a 1992 special Stommel issue of *Oceanus* magazine, Jim Luyten and Nelson Hogg wrote, "For most of the past 50 years, Henry Melson Stommel was the most influential figure in oceanography. Through his simple brilliance, his personal magnetism, and his great zest for life, he inspired legions of oceanographers."

Colleagues tend to describe a scientific conversation with Stommel as a situation where they had to "hang on" to follow his intellectual gymnastics. Luyten lists three essential Stommel qualities: insatiable curiosity, extraordinary intuition (he was relentless in stripping problems down to their most elemental levels), and the ability to visualize physical processes fully in three dimensions. Hank was also well known for his generosity with ideas—he sparked many individuals' research directions and initiated a number of collaborative oceanographic programs, both large and small.



In 1980, Stommel was recognized by President George H.W. Bush, who awarded him the National Medal of Science.

[About Henry Stommel](#) [Schedule](#) [Travel & Lodging](#) [Register](#) [Contact](#)

CMOS Congress 2021 Summary-Highlights

Congress 2021 had a great deal of Ocean Science content including:

- 23 Oral Scientific Sessions and 2 Poster Presentation Sessions on Ocean Sciences
- many other multi-disciplinary sessions that included oceanography
- 3 Plenary Speakers (Loseto, Snelgrove and Bertrand)
- Special Sessions: In Memory of Paul LeBlond and Panel Session on Canada and the UN Decade of Ocean Science for Sustainable Development
- Student events organized by Ocean Sciences students

The virtual Congress 2021 remains available [online](#) until May 31, 2022.

Anyone can access the Congress by going to this link, then entering an email (if they have not already done so), and then (re-)setting their personal password for the site.

A summary of the [Congress activities](#) will be going onto the CMOS website [here](#) very soon.

CMOS 56 is in [Saskatoon SK, May 29 - June 2, 2022](#).



AGU Fall Meeting 2021 - update

December 13-17 2021, New Orleans LA USA - Hybrid.

AGU Fall Meeting 2021 is proceeding as a hybrid in-person and online meeting. The AGU Fall Meeting is the primary gathering for Earth and space scientists, students, and those in affiliated fields to share scientific findings and identify innovative solutions. With in-person and worldwide online participation, attendees will have numerous opportunities to network with government regulators, scientific visionaries, and industry thought-leaders. Only fully vaccinated people will attend #AGU21 in person in New Orleans; all center and hotel staff will also be fully vaccinated. We are actively watching advice on gathering and travel.

AGU FALL MEETING

**New Orleans, LA & Online Everywhere
13-17 December 2021**

Abstract Deadline: 4 August

Registration Opens 23 August

Conference [website](#)

Gordon Research Conferences starts planning for 2022

The Gordon Research Conferences provide an international forum for the presentation and discussion of frontier research in the biological, chemical, physical and engineering sciences and their interfaces. There were no ocean related Gordon Research Conferences (GRC) or Seminars in 2021. Planning for meetings in the spring of 2022 has started. To see what might be coming, go to the GRC [Find a Conference](#) page and search for *ocean*.



The GRC [website](#)

*Please send meeting announcements to
David Greenberg,
davidgreenberg@alumni.uwaterloo.ca*

*SVP faites parvenir vos annonces de réunion à
David Greenberg,
davidgreenberg@alumni.uwaterloo.ca*

POSITIONS AVAILABLE

Professeure ou professeur en écologie des poissons

L'Université du Québec à Rimouski, qui accueille annuellement environ 7000 étudiants principalement aux campus de Rimouski et de Lévis, désire engager une professeure ou un professeur en écologie des poissons, affecté au Département de biologie, chimie et géographie.

La personne recherchée doit détenir un doctorat en biologie ou dans une discipline pertinente au profil recherché.

La ou le professeur.e devra posséder une expertise en écologie/évolution des poissons. Ce ou cette professeur.e s'intégrera à une équipe de professeurs en biologie s'intéressant notamment à l'écologie, l'évolution, la physiologie évolutive, l'écologie moléculaire, les changements globaux, la biologie marine, la microbiologie et la paléontologie.

La personne retenue pourra également s'investir au sein du groupe de recherche Boréas sur les environnements nordiques. Elle ou il sera responsable principalement de l'enseignement en français du cours d'ichtyologie, ainsi que d'écologie des eaux douces et/ou de l'aménagement de la faune aquatique.

Date d'entrée en fonction : 1er décembre 2021

Date limite 25 août 2021 à 16 h 30



Université du Québec
à Rimouski

Postdoc in Detection & Attribution of Extreme Events

Complutense University of Madrid, Spain

The successful candidate will join the Geosciences Institute (IGEO, Madrid), a Joint Research Center of CSIC (Spanish National Research Council) and UCM. IGEO gathers employees and resources from both institutions within the same infrastructure and carries out cutting-edge multi-disciplinary research in different topics related to climate. Within IGEO, the researcher will join the STREAM (stream-ucm.es/) research group, which has a long-standing experience in the fields of extreme events and atmospheric dynamics, including some recent developments in artificial intelligence. The group participates in number of international activities, it has established a dense network of collaborations and has coauthored more than 100 peer-reviewed publications in the last five years. This offers the successful applicant a dynamic and interactive environment for achieving a successful research career.



Deadline for applications - 31 October 2021

[Details](#)

PhD Position - Designing new marine coatings

University of Victoria, BC

High-performance, safer alternative coatings can increase longevity, energy efficiency when moving through water, and duty cycle of marine vessels and other deployed engineered systems. Two major processes that impact performance and longevity of marine materials are biofouling and corrosion. This project seeks to design new foul-release smart marine coatings that are safe for deployment in marine environments. The project goal is to apply advanced electrochemical techniques and supplemental microscopy to move GIT beyond asking "what happens?" to asking "why does it happen?".



Deadline August 15 2021.

[Details](#)

Assistant, Associate, or Full Researcher - Oceans and Atmosphere

Scripps Institution of Oceanography, La Jolla, CA

The Scripps Institution of Oceanography (SIO) at the University of California San Diego invites applications for one or more full-time Researcher positions to be funded by extramural research grants and contracts in any of the research areas listed below. We seek one or more candidates in all areas relevant to the Oceans and Atmosphere Section, broadly including physical oceanography, atmospheric science, climate science, ocean acoustics, and geochemistry, with particular interest in machine learning, coastal ocean-atmosphere interactions, hydrology, and marine robotic sensors. The positions require a PhD, or equivalent degree, in a relevant field at time of application and candidates should have a competitive record of publication, as well as evidence of the ability to conduct and fund an active research program consistent with career level.



Deadline Aug 31, 2021

[Details](#)

M.Sc. or Ph.D. position in Physical Oceanography:

Glacier-ocean interactions in the Canadian Arctic Archipelago

University of Alberta - University of British Columbia

We seek a highly-motivated graduate student at the M.Sc. or Ph.D. level interested in a research project that involves the analysis of a combination of oceanographic observations and high resolution numerical model output. The scientific questions guiding the project remain open and will relate to the physical oceanography of the region, oceanic exchanges into fjords and their impact on tidewater glaciers, the role of freshwater in Jones Sound, the fate of glacier inputs on a regional scale, and/or high-resolution regional ocean modelling methods. The successful candidate will work under the joint guidance of [Dr. Stephanie Waterman](#) (Department of Earth, Ocean & Atmospheric Sciences, University of British Columbia) and [Dr. Paul Myers](#) (Department of Earth and Atmospheric Sciences, University of Alberta). Although a student would have either the University of Alberta or the University of British Columbia as their home institution, an extended visit of 3-4 months to the other institution would likely be part of the program. The start date is flexible with a start date of January, May or September 2022 being ideal. There are likely opportunities to participate in related fieldwork in summer 2022 and summer 2023.



Review of applications starts 1 Sept 2021

[Details](#)

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

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

GENERAL

Quand la création littéraire rencontre les sciences de la mer

Extrait d'un article de Jean-François Bouchard

trouvé dans [ISMER-UQAR Actualités](#)

Les projets de recherche mariant les sciences de la mer et la création littéraire sont rares, très rares. Camille Bernier et Tina Laphengphratheng ont eu la chance d'accompagner une équipe d'océanographes dans le cadre d'une mission sur l'estuaire du Saint-Laurent à bord du Coriolis II. Une occasion unique pour ces deux étudiantes à la [maîtrise en lettres](#).

L'été et l'automne derniers, ces étudiantes ont réalisé des projets de recherche-crédation sur la géopoétique,



Photo : Camille Bernier

l'écopoétique et l'éthique lors d'une mission transdisciplinaire menée par le [professeur Jean-Carlos Montero-Serrano](#), de l'ISMER-UQAR, et ses collègues **Audrey Limoges** de l'Université du Nouveau-Brunswick et **Alexandre Normandeau** de la Commission géologique du Canada (Atlantique). Une mission visant à étudier les processus hydrodynamiques, les risques associés à la remobilisation sédimentaire et leurs impacts sur les dynamiques de productivité primaire dans un système de canyons sous-marins situé au large de Pointe-des-Monts.

Selon la [professeure en création littéraire Kateri Lemmens](#), ce type de collaboration permet un

renouvellement des pratiques de recherche et un meilleur partage des connaissances. « Devant les défis qui se présentent à l'humanité en temps de crise, on voit émerger de nouvelles manières de penser, de lire et de raconter le monde qui nous appellent à franchir les barrières des disciplines. Partout dans le monde, de plus en plus de projets concernant l'anthropocène et notre rapport à la nature sont abordés en impliquant des équipes de création, parce que la création parvient à aborder et à exprimer ce qui est hautement humain dans nos expériences du monde : l'émerveillement, la détresse, l'attachement, alors que les équipes scientifiques ont souvent été habituées à soustraire la subjectivité et la vulnérabilité de leurs manières de raconter ce qu'elles découvrent. »



Photo : Camille Bernier

...

La professeure Lemmens souhaite que ces collaborations se répètent dans l'avenir. « La richesse du questionnement scientifique représente un formidable réservoir de questionnements pour la création, un appel à renouveler son regard, à apprendre à voir autrement, à redécouvrir et à s'étonner », conclut la professeure en création littéraire. Le Réseau Québec maritime (RQM) et MEOPAR (Marine Environmental Observation, Prediction and Response Network, un réseau national de centres d'excellence du Canada) appuient financièrement ce projet transdisciplinaire.

Pour tout l'article, visitez [Quand la création littéraire ...](#) .

Biodiversity and Climate Change

IPBES-IPCC co-sponsored workshop

Climate change and biodiversity loss are two of the most pressing issues of the Anthropocene. While there is recognition in both scientific and policy-making circles that the two are interconnected, in practice they are largely addressed in their own domains. The research community dedicated to investigating the climate system is somewhat, but not completely, distinct from that which studies biodiversity. Each issue has its own international Convention (the UN Framework Convention on Climate Change and the Convention on Biological Diversity), and each has an intergovernmental body which assesses available knowledge (the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES)). This functional



Conserving biodiversity supports adaptation to climate change

- 6. Biodiversity assists people and ecosystems to adapt to climate change. Actions that halt, slow or reverse biodiversity loss can also help mitigate climate change. To support intact and fully functional habitats under climate change and halt biodiversity loss, around 30 to 50 percent of the world's ocean and land would be effectively conserved.



separation creates a risk of incompletely identifying, understanding and dealing with the

connections between the two. In the worst case it may lead to taking actions that inadvertently prevent the solution of one or the other, or both issues. It is the nature of complex systems that they have unexpected outcomes and thresholds, but also that the individual parts cannot be managed in isolation from one another. The joint IPBES-IPCC workshop set out to explore these complex and multiple connections between

climate and biodiversity. This workshop and its report represent the first ever joint collaboration between the two intergovernmental bodies and therefore a landmark activity in both of their histories.

The workshop output is being made available as a [slides](#) and a [report](#).

IPBES-IPCC CO-SPONSORED WORKSHOP
BIODIVERSITY AND CLIMATE CHANGE
WORKSHOP REPORT



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

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Newsletter #120 will be distributed in **September 2021**.

Please send contributions to David Greenberg
davidgreenberg@alumni.uwaterloo.ca

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Le Bulletin #120 sera distribué en **septembre 2021**.

Veillez faire parvenir vos contributions à David Greenberg, davidgreenberg@alumni.uwaterloo.ca

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