

# Challenger Wave



Monthly newsletter of the Challenger Society for Marine Science (CSMS)

## NEWS

### NOC's Chief Executive Professor Ed Hill receives CBE

The NOC's Chief Executive, Professor Ed Hill, received the insignia of a CBE at an investiture at Windsor Castle held by HRH the Duke of Cambridge. Professor Hill was awarded the CBE in the Queen's Birthday Honours 2020 list, in recognition of his services to ocean and environmental sciences.



Commenting, Professor Ed Hill, said, "I am delighted and honoured to have received this award, and I remain dedicated to raising the profile of the vital role the ocean plays in our world. I am pleased to represent the NOC as the need for ocean science becomes centre stage, and it is more important than ever that we come together to reverse the effects of climate change." For more information visit [noc.ac.uk/news/nocs-professor-ed-hill-receives-cbe-services-ocean-environmental-sciences](http://noc.ac.uk/news/nocs-professor-ed-hill-receives-cbe-services-ocean-environmental-sciences).

### NOC uncovers ground-breaking shifts in tipping points in marine ecosystems

Scientists from the National Oceanography Centre (NOC) have discovered shifts in tipping points driven by climate change, during a study investigating 21st century plankton communities. Tipping points in the Earth system are a potential

consequence of climate change and are of great concern and whilst they can occur in marine ecosystems, little is known about what they might look like, and when and why they might happen.

In a complex virtual marine microbial ecosystem, scientists found that climate change-driven shifts over the 21st century are often abrupt, large in amplitude and extent and unpredictable using standard early warning signals. The scientists used the Massachusetts Institute of Technology Darwin Model, a state-of-the-art computer model suited to investigate future tipping points in marine ecosystems, in particular, in plankton; which play crucial roles in global climate and the carbon cycle. By using a combination of the computer model and mathematical analysis, scientists were able to investigate tipping points in marine ecosystems, a first for the science community. Scientists at the NOC found that tipping points are predicted to occur in marine ecosystems, particularly in the subtropics and in fast-growing plankton types like diatoms. Phytoplankton with unique resource needs, especially fast-growing species such as diatoms, are more prone to abrupt shifts.

Abrupt shifts in biomass, productivity and community structure are concentrated in Atlantic and Pacific subtropics. Abrupt changes in environmental variables such as temperature and nutrients rarely precede these ecosystem shifts, indicating that rapid community restructuring can occur in response to gradual environmental changes, particularly in nutrient supply rate ratios.



Dr Cael, Senior Research Scientist from the National

Oceanography Centre, commented: "Marine microbial communities will change with the climate, interrupting how they sustain ocean food webs and mediate global elemental cycles. These changes can be gradual or foreseeable but likely have much more substantial consequences when sudden and unpredictable. This is an important example of how human activity can affect the Earth in big and unpredictable ways, and we hope this will help inform climate policies as to the risks of future climate change.". You can read the research paper at [DOI:10.1126/sciadv.abf8593](https://doi.org/10.1126/sciadv.abf8593).

### Applications open for the Irish Marine Institute's Bursary Programme

The Marine Institute continues to invest in the next generation of ocean professionals, through the 2022 Summer Bursary Scholarship Programme, which provides third level students with work experience across a number of marine areas.

Our Bursary Scholarship Programme has been running for more than 30 years, providing essential career development and support, and inspiring the next generation of marine scientists and experts. The programme equips students with the skills to become ocean leaders and marine champions of the future.

Mick Gillooly, Interim CEO at the Marine Institute said, "By working with experts in their field, undergraduate students can strengthen their skills and knowledge and form valuable networks in the marine sector. The programme enables students to make informed decisions early in their studies about the marine and maritime careers they would like to pursue."

The Bursary Scholarship Programme is aimed at undergraduates of Universities, Institutes of Technology and National Institutes for Higher Education. To participate in the programme, undergraduate students must have completed two years of study in a relevant discipline by the beginning of June 2022.

The programme will offer 8 to 12 week placements for up to 14 undergraduate students. The programme offers students practical experience in areas such as Freshwater Fisheries, Aquaculture, Marine Infrastructure Asset Management, Oceanographic Analysis, Ocean Economics, Research Office, Human Resources, Library and Molecular Chemistry and

Marine Communications. The bursaries are based at our facilities in Oranmore, Galway and Newport, Mayo.

To apply for the 2022 Bursary Programme, please view the bursary titles available, select the two bursary positions that interest you the most and in order of preference complete the online application form and submit as per instructions, [www.marine.ie/Home/site-area/news-events/press-releases/applications-open-marine-institute's-bursary-programme](http://www.marine.ie/Home/site-area/news-events/press-releases/applications-open-marine-institute's-bursary-programme). The application deadline is Friday 25th February 2022.

### MASTS Webinars – first title announced

23th February at 13:00 GMT, "Open to all, a new strategic partnership between St Abbs Marine Station and the University of Edinburgh" with Murray Roberts and Kevin Scott.

The University of Edinburgh and St Abbs Marine Station have signed a 5-year collaboration agreement that brings the University's School of GeoSciences, School of Biology and Roslin Institute together with the Marine Station to promote marine research, teaching and outreach activities. The new collaboration is open to all in Scotland, the UK and internationally who want to use the St Abbs facility.

As a thriving fishing community at the heart of a Voluntary Marine Reserve and a National Nature Reserve, St Abbs is ideal for interdisciplinary marine research and teaching. The station is built entirely from non-ferrous materials and operates Hemholtz coils to simulate the electromagnetic fields generated by subsea power cables. Alongside tight control of seawater temperature, pH and oxygen levels this gives researchers using St Abbs a unique opportunity to study the implications of marine renewable energy installations in the context of multiple stressors including climate change. Webinar open to any careers stages, sign up here, [us02web.zoom.us/webinar/register/1916433632078/WN\\_gkP6gpcpRQaJvhf26ok7\\_A](https://us02web.zoom.us/webinar/register/1916433632078/WN_gkP6gpcpRQaJvhf26ok7_A).

## VIEWS

### Sonardyne hybrid positioning chosen for vessels across energy and science

Acoustic and inertial position reference systems from marine technology company Sonardyne

have been chosen to underpin the critical station keeping activities of multiple deepwater vessels operating in the energy and ocean research sectors. Through a combination of upgrades to existing installations and the purchase of new systems, four deepwater drillships, a marine construction vessel and a floating production system working in both North and South America will be using Sonardyne's 6G (sixth generation) Marksman DP-INS technology. In addition, an ultra-deepwater scientific drilling vessel has now also upgraded its Marksman DP-INS system to the latest 6G equipment configuration.



*Helix Energy Solution's Helix Producer-1 floating production system is supported by Sonardyne's 6G DP-INS system. Image from Helix Energy Solutions, by Robert Almeida.*

Marksman DP-INS improves vessel positioning performance by exploiting the long-term accuracy of Sonardyne's Wideband acoustic signal technology with high integrity, high update rate inertial measurements. The resulting navigation output is capable of riding-through short-term acoustic disruptions associated with deep water drilling and is completely independent from GNSS so can be considered as a third, independent reference for DP Class 3 vessels.

The system uses a combination of single or dual redundant surface transceivers, Sonardyne's own vessel-based INS sensor and Long Baseline (LBL) seafloor transponders. However, unlike conventional LBL operations, Marksman DP-INS does not need a full seabed array of transponders to be installed and calibrated before subsea operations can commence. For most subsea tasks, positioning specifications can be met with only one or two transponders deployed on the

seabed. Additionally, as the system needs only occasional aiding from the acoustics, transponder battery life is substantially increased so the need to task an ROV to deploy and recover transponders for servicing is reduced.

Andre Moura, sales & Application Manager, at Sonardyne in Brazil, says, "Vessel utilisation rates have been rising steadily over the past 12 months, providing vessel owners and operators with the confidence to invest now in technologies that will deliver long-term operational efficiency gains. Marksman DP-INS is one of those technologies; it's mature and field proven technology which can be installed in the field and addresses industry's need for a third, independent DP reference."

### **MSM Ocean and Sonardyne partner on tsunami early warning system**

Metocean and environmental data measurement specialist MSM Ocean and marine technology company Sonardyne have agreed to team-up on the supply of a complete solution for warning coastal communities of a tsunami. The two companies can now jointly provide at-risk coastal nations with a single source of supply of tsunami early warning systems.

The agreement combines MSM Ocean's expertise in oceanographic measurement buoys, on-board data processing and telecommunications and Sonardyne's highly precise deep water pressure measurement and acoustic through-water telemetry capabilities. Together, these allow minute changes in deep water pressure at the seafloor that indicate a tsunami to be reliably detected, triggering a direct alert to national emergency organisations via acoustic and satellite communications, all within seconds.

The tsunami early warning system is fully IALA (International Association of Marine Aids to Navigation and Lighthouse Authorities) compliant and can be deployed in areas of up to 7,000 m water depth. Through the teaming agreement, MSM Ocean and Sonardyne have also agreed to explore further possibilities for combining their technologies in support of remotely connecting ocean scientists to their instruments on the seafloor via buoys.

Sonardyne has been supplying integrated Bottom Pressure Recorders (BPRs) configured for deep

water tsunami detection to organisations around the world since 2007. Combining precise sensing, long-life battery and reliable communications in one easy to deploy and recover instrument, they were developed following the devastating 2004 Indian Ocean tsunami. For the past decade, these have been integrated into MSM Ocean's buoy-based Tsunami Early Warning Systems, which have been successfully installed along the Pacific coast of South America. This includes two systems deployed off Ecuador which detected the January 15th tsunami, caused by the Hunga-Tonga submarine volcano eruption, 10,000 km away in the South Pacific. Alerts were raised by MSM Ocean's buoys with the National Tsunami Warning Center of Ecuador just 35 seconds after the wave was detected by Sonardyne's Bottom Pressure Recorder.



MSM Ocean and Sonardyne have agreed to partner on tsunami early warning systems. Image from MSM Ocean.

Cecile Zanette, CEO at MSM Ocean, says, "Tsunamis present a threat to numerous coastal countries around the world mostly located around the Pacific Ring of Fire but also in other areas maybe less present in our mind such as in Europe and the Caribbean for example. Reliable and available systems of detection and early warning are a key component in the complex equation to mitigate the risk to population. And this is exactly such a system, field-proven, that we have developed combining Sonardyne's highly precise Bottom Pressure Recorder technology with our instrumented buoys' expertise."

Geraint West, Head of Science at Sonardyne, says, "We have been working closely with MSM Ocean for more than a decade and together we recognised the benefit of providing a fully integrated and supported seafloor-to surface-to shore solution. By formalising our relationship, we can now offer a one-stop-shop for this critical

capability to a wider range of coastal communities. Organisations can now approach either company for their remote tsunami early warning system configured to match their exact needs."

## SALTS

### No news from sea this month I'm afraid

I know that this is a favourite section for many readers, where we get the inside information about life at sea, its thrills and spills. So please the next time you are at sea or carrying out any fieldwork, please remember that a simple paragraph or two will get you published here. – Ed

## CALENDAR

### 27th February – 4th March 2022: Ocean Sciences Meeting 2022

Honolulu, Hawaii, USA



The session list for the Ocean Sciences Meeting 2022 scientific program is now available, [www.aslo.org/osm2022/scientific-sessions/](http://www.aslo.org/osm2022/scientific-sessions/).

The Ocean Sciences Meeting 2022 will be held in Honolulu, but with virtual components. Attendees will have the option of participating in-person or remotely.

### 15th–17th March 2022: Oceanology International (OI)

London, UK

Oceanology International (OI) is the leading global event connecting industry, academia and government with the ocean technology community. It has a 50 year legacy as market leader in the oceanographic sector. A Truly global event with 8,000 attendees from 90 countries representing 15 diverse end-user sectors. It is the largest exhibition/trade show in this sector, with 480+ exhibiting companies.

Oceanology International London 2022 will connect you with 7,500 buyers and influencers from more than 80+ countries looking for innovative solutions to improve strategies for exploring, monitoring, developing and protecting the world's oceans. For 50 years, no other event has provided such a perfect global platform to showcase your solutions, from technical to strategic professionals from academia, government and over 15+ key industries, all unified by their use of ocean technology.

Demonstrate and promote your company's capabilities, generate qualified leads and strengthen and develop your networks both face-to-face in London, and digitally throughout the year. For more information and register, please visit [www.oceanologyinternational.com/london/en-gb.html](http://www.oceanologyinternational.com/london/en-gb.html).

**9th–12th May 2022: Fourth ICES PICES Early Career Scientist Conference**

*St. John's, Newfoundland, Canada*  
 Hosted by Fisheries and Oceans Canada (DFO), [www.dfo-mpo.gc.ca/index-eng.html](http://www.dfo-mpo.gc.ca/index-eng.html), The International Council for the Exploration of the Sea (ICES), [www.ices.dk/about-ICES/Pages/default.aspx](http://www.ices.dk/about-ICES/Pages/default.aspx), and North Pacific Marine Science Organization (PICES), [meetings.pices.int](http://meetings.pices.int), welcome you the fourth conference of this series, where early career scientists will have the opportunity to meet colleagues from around the globe who share similar interests and an enthusiasm to improve equality and diversity in marine science. The conference aims to foster the development of contacts, collaborations, and associations among early career scientists that will persist for decades and to establish personal and institutional networks that will help to advance our understanding of the marine environment.

The scientific sessions will be organized around the following themes:

**Ecosystem and ocean processes**

1. Biodiversity and ecosystem functions
2. Understanding food webs and biogeochemical cycles
3. Developments in taxonomy and systematics
4. Connecting biological, oceanic, and atmospheric processes of different scales

**Inclusive, interdisciplinary, and transparent ocean sciences**

1. Human–ocean interactions
2. Science, management, and policy for a sustainable and productive Blue Economy
3. Science communication, inspiration, and engagement

**Emerging technologies and techniques for ocean science**

1. Using remote and *in situ* technologies to inform marine science
2. Advances in techniques and technologies: from 'omics to gear modifications to data analysis
3. Towards open-source science: freely available methods and data in the marine research

Visit the ECSC4 website, [www.ices.dk/events/symposia/ecsc4/Pages/default.aspx](http://www.ices.dk/events/symposia/ecsc4/Pages/default.aspx), to read more about the conference and the theme sessions and stay up-to-date by following us on Twitter [@ECSC\\_4](https://twitter.com/ECSC_4) for announcements of keynote speakers, the programme, and important dates. Registration and call for abstracts will open in.

**16th–20th May 2022: 53rd International Liège colloquium on Ocean Dynamics, and GO2NE oxygen conference**

*Liège, Belgium*  
 Oxygen is critical to the health of the planet. It affects the cycles of carbon, nitrogen and other key elements, and is a fundamental requirement for marine life from the seashore to the greatest depths of the ocean. Nevertheless, de-oxygenation is increasing in the coastal and open ocean. This is mainly the result of human activities that are increasing global temperatures (CO<sub>2</sub>-induced warming) and increasing loads of nutrients from agriculture, sewage, and industrial waste, including pollution stemming from power generation using fossil fuels and biomass.

The 53rd Liège colloquium will investigate new developments and insights related to de-oxygenation in open and coastal waters. It is jointly organized with the Global Ocean Oxygen Network (GO2NE) and is a contribution to the Global Ocean Oxygen Decade (GOOD) program endorsed by IOC-UNESCO. The following sessions are considered:

- De-oxygenation: understanding causes and attributing changes
- Assessing open ocean and coastal de-oxygenation variability and trends

- De-oxygenation: observing and modelling
- De-oxygenation and ocean life
- De-oxygenation and co-stressors: understanding, monitoring and mitigating deoxygenation in the context of multiple stressors
- Ocean De-oxygenation - how the past can inform the future?
- Microbial Communities and their controls on biogeochemical feedbacks and interactions
- De-oxygenation, water quality and the climate system: understanding processes and feedbacks and developing actionable indicators
- De-oxygenation: ecosystem services, economic and societal consequences.
- Confronting de-oxygenation and its impacts: translating science to management and policy



The abstract submission deadline has been extended until February 20th. At this stage, we have already received more than 130 abstracts. Further details (scientific committee, registration, deadlines, venue etc...) are available on the web site <https://www.ocean-colloquium.uliege.be/>.

### 23rd–27th May 2022: The General Assembly 2022 of the European Geosciences Union (EGU)

Vienna, Austria

The EGU General Assembly 2022 will bring together geoscientists from all over the world in one meeting covering all disciplines of the Earth, planetary, and space sciences. The EGU aims to provide a forum where scientists, especially early career scientists, can present their work and

discuss their ideas with experts in all fields of geoscience.

In view of increasing event restrictions in Austria, currently limiting events to 2000 people, that we anticipate will be relaxed later in the year and attendee concerns over the high infection rates in Europe, the EGU has had to make some important changes to our plans for this year's General Assembly. Firstly, we have had to move the date of the meeting to May. Moving the meeting back closer to summer months means that infection rates are likely to be lower and the Austrian rules around large events will be more flexible.

Secondly, we have had to change the format of the meeting, so that all presentations will now be 'short orals ([egu22.eu/about/provisional\\_meeting\\_format.html](http://egu22.eu/about/provisional_meeting_format.html))', that can be delivered and viewed either online or in person. This change is a result of restrictions on having a large number of non-seated people in an enclosed space, like a poster hall, which has meant that we can no longer offer the poster or vPICO options in 2022. We are also creating opportunities for both online and in-person audience participation with this format, that we hope will maintain the accessibility that we were aiming to achieve with this, our first step towards a fully hybrid meeting.

For more information about the changes to the General Assembly please read the full news announcement ([//www.egu.eu/news/886/important-update-egu22-change-of-date-and-format/](http://www.egu.eu/news/886/important-update-egu22-change-of-date-and-format/)) or the updated FAQ [egu22.eu/about/egu22\\_faqs.html](http://egu22.eu/about/egu22_faqs.html).

The assembly is open to the scientists of all nations. The entire congress centre is fully accessible by wheelchairs. For more information regarding the programme and registration please visit [egu22.eu/](http://egu22.eu/).

### 19th–22nd June 2022: Ecosystem Studies of the Subarctic and Arctic Seas (ESSAS) 2022 Annual Science Meeting

Washington, Seattle, USA



**Bridging the past and present to manage the future of northern fisheries and ecosystems**



19-22 June 2022  
Fisheries Auditorium, University of Washington  
Seattle, WA, USA

Hybrid in-person/online

High-latitude marine ecosystems are undergoing rapid changes due to increasing anthropogenic carbon emissions, with potentially important impacts on living marine resources and on the people dependent on these resources. These systems, particularly the gateways to the Arctic, have undergone large changes in the past between periods of cooler and warmer conditions, as evident in the paleo-ecological record. The 2022 ESSAS Annual Meeting aims to bridge perspectives from paleo-ecology, contemporary ecology, and human-environment interactions to inform the future management of fisheries and other living marine resources. The meeting will encompass a shared session with the [Oceans Past Initiative](#).

Sessions include:

- Interdisciplinary collaboration across the marine sciences and humanities: Past, present and future
- The past, present and future of codfish population in the subarctic and Arctic
- Building on the past to predict the future: scenarios, models and interdisciplinary approaches to predicting future marine conditions and fisheries

Submit your abstract by 1 March!

[Learn more](#)



imber@dal.ca

**4th–8th July 2022: Viii International Symposium on Marine Sciences**

*Las Palmas de Gran Canaria, Spain*

A number of Conferences will take place under the umbrella of the Marine Sciences Week in Las Palmas de Gran Canaria, these are:

- International Symposium on Marine Sciences (ISMS 2022)
- International Symposium on Artisanal and Recreational Fishing in Islands Systems (ISARFIS)
- Expanding Ocean Frontiers (EOF)
- Maritime Spatial Planning (MAPSIS22)
- Iberian Seminar on Marine Chemistry (SIQUIMAR)
- Marine Litter (BAMAR)
- International Conference on Modern and Fossil Dinoflagellates (DINO12)



The ISMS 2022 will be a face to face event and online event. All sessions will also be available online 48 hours after they take place. The access to the recordings will be accessible until August 1st at 12:00 (Canary Islands time). The abstracts submission is already open. You can download the templates and submit your abstracts through the abstract form on the web page, [isms-canarias.com/](http://isms-canarias.com/).

**27th–29th August 2022: Arctic Circle Greenland Forum**

*Nuuk, Greenland*

Greenland in the global Arctic, climate and prosperity, geopolitics and progress, organised in association with Naalakkersuisut, the Government of Greenland.



The Forum will be held at the Katuaq Cultural Centre in Nuuk. Governments, universities, research institutions, organizations, associations, companies and other partners are invited to submit proposals for Sessions to the Arctic Circle Secretariat. Submit your proposal before the 1<sup>st</sup> June by visiting [www.arcticcircle.org/proposal-guidelines-for-the-greenland-forum](http://www.arcticcircle.org/proposal-guidelines-for-the-greenland-forum). For more information, visit [www.arcticcircle.org](http://www.arcticcircle.org).

**5th-8th September 2022: ECSA 59: Using the best scientific knowledge for the sustainable management of estuaries and coastal seas**

*San Sebastian, Spain*

ECSA 59 will bring together a global multi-disciplinary community of researchers, educators and practitioners to address issues of outstanding importance in the science (both natural and social) and management of estuaries and coastal seas in this rapidly changing world.

The abstract submission deadline is the 1st April 2022. For our full list of topics and special sessions please visit the website at [www.estuarinecoastalconference.com/submit-abstract.asp](http://www.estuarinecoastalconference.com/submit-abstract.asp).

**5th-9th September 2022: Challenger Society Biennial Meeting – celebrating the 150<sup>th</sup> anniversary of the Challenger Expedition**  
*London, UK*

To be hosted by the National History Museum, just a 'date for the diary', stay tuned.

**19th-23rd September 2022: Open Science Conference on Eastern Boundary Upwelling Systems (EBUS): Past, Present and Future and the Second International Conference on the Humboldt Current System**  
*Lima, Peru*



The meeting will bring together PhD students, early career scientists and world experts to understand, review, and synthesize what is known about dynamics, sensitivity, vulnerability and resilience of Eastern Boundary Upwelling Systems and their living resources to climate

variability, change and extreme events. For more information, visit [www.ebus-lima2022.com/](http://www.ebus-lima2022.com/).

**27th–29th August 2022: Arctic Circle Assembly**

*Reykjavik, Iceland*

The 2021 Arctic Circle Assembly was the largest in-person Arctic event during the pandemic with 1500 participants. Participants safely attended and enjoyed over 100 events: Sessions, Receptions, Film Screenings, and various networking opportunities. Governments, universities, research institutions, organizations, associations, companies and other partners are invited to submit proposals for 2022 Sessions to the Arctic Circle Secretariat: submit your proposal before the 15th May deadline, [www.arcticcircle.org/assemblies/2022-arctic-circle-assembly-call-for-proposals](http://www.arcticcircle.org/assemblies/2022-arctic-circle-assembly-call-for-proposals).

The Arctic Circle provides an open, democratic forum for discussion and cooperation on Arctic Affairs. Participation will be granted based on Session topic, area of focus, goals, and room availability at Harpa Concert Hall and Conference Centre.

**8th-10th November 2022: 12th MASTS Annual Science Meeting**

*Scotland*

Save the date for the Marine Alliance for Science and Technology Scotland (MASTS), more details soon.

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The CSMS email address is [info@challenger-society.org.uk](mailto:info@challenger-society.org.uk). Contributions for next month's edition of Challenger Wave should be sent to: [john@vectisenvironmental.com](mailto:john@vectisenvironmental.com) by the 28th February.

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## **JOBS and OPPORTUNITIES**

### **Post-doc and research scientist positions at the Centre for Ocean-Atmospheric Predictions Studies (COAPS) at Florida State University**

The Centre for Ocean-Atmospheric Predictions Studies (COAPS) at the Florida State university invites applications for postdoctoral or more senior research positions to work in the areas of ocean modelling, ocean prediction, and/or machine learning. The work is part of a broad effort to improve Navy, NOAA, and NASA operational ocean models and data assimilation methods and is a component of a multi-institutional effort including the Naval research Laboratory (NRL), NOAA National Centres for Environmental Prediction (NCEP), Scripps Institution of Oceanography, Massachusetts Institute of Technology (MIT), the Woods Hole Oceanographic Institution (WHOI), Texas A&M, etc.

The applicant must hold a Ph.D. or must have submitted his/her/their doctoral theses for assessment prior to joining. The ideal candidates should have a strong background in one or more areas among dynamical oceanography, ocean modelling, data assimilation, machine learning, applied mathematics, or numerical methods. The applicant must have the ability to work comfortably in the Unix/Linux environment with experience in scientific software development, shell scripting, and experience with Python/Matlab/GrADS or similar analysis software. The applicant must be motivated, have the ability to work independently, and be willing to cooperate with peers and students in the team. A major emphasis of this search is on the potential for independent and creative research by the candidate. Early career post-docs will be exposed to research and career opportunities. Salaries and benefits will be commensurate with the candidates' experience. Appointees are eligible for health insurance through Florida State University.

Candidate application materials should include a current CV, summary of doctoral dissertation and/or past research experience, statement of research interest, and the contact information of three references. Applications will be accepted until all positions are filled. If interested, please contact Professor Eric Chassignet at [echassignet@fsu.edu](mailto:echassignet@fsu.edu).

COAPS is an equal opportunity/affirmative action employer. All qualified applicants will receive consideration for employment without regard to sex, gender identity, sexual orientation, race, color, religion, national origin, disability, protected Veteran status, age, or any other characteristic protected by law.

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# Funding opportunities

## UK-Canada Globalink doctoral exchange scheme

Apply for funding to undertake a 12-week research placement in Canada. You must be a doctoral student funded by a UKRI research council and working in any field. Funding can be used for:

- fees and stipends
- research costs
- travel and subsistence costs.

You may request up to £15,000 for each placement.

[www.ukri.org/opportunity/uk-canada-globalink-doctoral-exchange-scheme-2/?utm\\_medium=email&utm\\_source=govdelivery](http://www.ukri.org/opportunity/uk-canada-globalink-doctoral-exchange-scheme-2/?utm_medium=email&utm_source=govdelivery)

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There are jobs on the IMBER web site

<http://www.imber.info>



Integrated Marine Biosphere Research

## Jobs and opportunities

### New

- Postdoc: Population genetics of sugar kelp of the Canadian Atlantic Coast, Université du Québec à Rimouski and Merinov, Rimouski and Gaspésie, Quebec, Canada. No deadline given; **apply now**
- Ocean Operations Manager, Open Ocean Robotics, Victoria, BC, Canada. No deadline given; **apply now**
- Andre Hoffmann Fellow: Innovations for Small-Scale Fisheries and Aquaculture - Stanford University, Center for Ocean Solutions. Open until filled; **apply now**
- Early Career Researcher Fellowships: CLASS Project, NOC and SAMS
- Lecturer: Biological Sciences, University of Hawai'i, Kapolei, USA. No deadline given; **apply now**
- Research Professor (Assistant or Associate): carbon management, Lamont-Doherty Earth Observatory, Columbia University, New York, USA. Open until filled; **apply now**
- Scientist: Marine ecological-biogeochemical modelling, GEOMAR, Kiel, Germany. Apply by **17 February**
- Two postdocs: Coupled Earth system-fisheries models, University of California at San Diego, USA. Apply by **25 February**
  - Fisheries predictability
  - Online coupled models
- Senior Environmental Specialist, World Bank Global Environmental Facility, Washington, DC, USA. Apply by **25 February**
- European marine Board Young Ambassador Programme. Apply by **27 February**
- Three senior positions at The Inter-American Tropical Tuna Commission, La Jolla, California, USA. Apply by **28 February**:
  - Senior Quantitative Vulnerable Species Ecologist
  - Senior Bycatch Mitigation Scientist
  - Senior Quantitative Fisheries Scientist
- Interdisciplinary School for the Blue Planet (ISblue) launches international fellowship program. Apply by **30 April**
- MSc (full scholarship): Fisheries science, Memorial University of Newfoundland, Canada. Apply by **30 April**

### In case you missed it...

- Research Scientist: Quantitative Coastal Ecologist, CSIRO, Brisbane or Perth, Australia. Apply by **20 February**
- Postdocs: range of disciplines, University of Konstanz, Germany. Apply by **22 February**

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[imber@imr.no](mailto:imber@imr.no)