April 2026

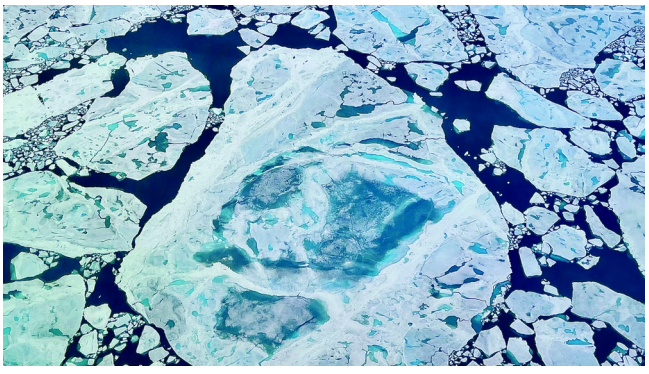
Challenger Wave

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

NEWS

Ocean Visions Awards New Funding for Research on Novel Approaches to Protect and Restore Arctic Sea Ice

Ocean Visions has selected six research projects through a highly competitive process to receive funding through its Arctic Sea Ice Restoration Research Fund. The Fund was created to identify, prioritize, and support research on cutting-edge ideas to slow the loss of Arctic sea ice. Arctic summer sea ice is critical to global climate regulation and regional climate stability, but it is projected to disappear by 2050. Current declines in summer sea ice have accelerated regional warming in the Arctic, which is increasing melt of the Greenland Ice Sheet and thaw of Arctic permafrost. Changes in these two globally important systems in turn contribute to increased sea level rise and release of additional greenhouse gases, with corresponding disruption of Arctic ecosystems, ocean circulation, global weather patterns, and societal systems. Determining whether there are any actions that might feasibly help maintain and restore Arctic summer sea ice could significantly reduce the risk of irreversible and non-linear change.



While the only durable way to halt and ultimately reverse global warming is through emissions reductions and carbon removal, most projections show these actions are unlikely to have an effect in time to prevent the complete disappearance of summer sea ice in the Arctic. Given the large risks associated with a seasonally ice-free Arctic Ocean, Ocean Visions is catalysing research efforts to examine the potential of proposed approaches to help slow and reverse summer sea ice decline. “Arctic summer sea ice is a critical foundation of the global ocean and climate system, and its rapid loss is creating a series of severe risks to nature and people across the planet,” said Brad Ack, CEO at Ocean Visions. “These research projects, and others to come, are intended to help answer the glaring question: Is there anything else we can do to forestall these potentially irreversible outcomes?”

The funded projects build from Ocean Visions’ Arctic Sea Ice Road Maps, which assess 21 potential approaches to slow the loss of Arctic sea ice. For each approach, the road maps look at social and environmental risks and co-benefits, governance considerations, and critical knowledge gaps. “We are pleased to see these projects advance,” said Dr. Mark Symes, Programme Director at the UK’s Advanced Research and Invention Agency, which has also funded research on sea ice restoration. “There is a pressing need for responsible research to inform society about what is feasible, safe, and ecologically sound, allowing communities to identify approaches that might work, as well as ones that should be paused or abandoned.”

Four of the funded teams will use different methods to explore whether and how clouds and their heat-trapping or heat-reflecting properties influence sea ice. The goal is to improve understanding of the potential for “mixed phase cloud thinning”, which would enhance the release of trapped heat, or “marine cloud brightening”, which would increase the reflection of solar energy back to space. Two additional teams will evaluate proposed approaches for keeping sea

ISSN 0306-7335

ice in the Arctic that include reducing or blocking sea ice export through the Nares or Fram Straits. Projects will use historical or model data and do not include any fieldwork or collection of new observations.

Ocean Visions selected these research areas as priorities and solicited proposals through an open call: Advancing Understanding of Approaches to Protect and Restore Arctic Sea Ice. Proposals were selected through a competitive process, including review by an independent international expert panel, with final award decisions made by Ocean Visions. The research to be conducted will provide the foundation for future work, if warranted, to further advance knowledge and address ecological, social, and ethical dimensions, as well as develop guidance on safeguards or stage gates for future research. "The research supported through the Arctic Sea Ice Restoration Research Fund prioritizes scientific merit, interdisciplinary approaches, and careful risk assessment through a rigorous review," said Dr. Ginny Selz, Senior Program Director at Ocean Visions. "We are excited to watch this research progress and see how it expands our understanding of potential approaches to protect and restore Arctic sea ice."

Integrated Ocean Carbon Research (IOC-R) Report Released

We are excited to share that the Integrated Ocean Carbon Research (IOC-R) Report has been published by the Intergovernmental Oceanographic Commission (IOC) of UNESCO. The report is the result of a global community effort and was developed by 72 authors from 23 countries, including contributions from IOCCP SSG members: Galen McKinley, Richard Sanders, Maciej Telszewski, and Adrienne Sutton. We also take this opportunity to express our huge gratitude to Christopher L. Sabine for co-leading the IOC-R programme on behalf of IOCCP since 2018.

The report highlights critical uncertainties in how much carbon the ocean absorbs, with model differences of 10-20% at global scale, and outlines priority areas for international scientific collaboration. The IOC-R community has defined five focus areas for ocean carbon research:

- Evolution of the ocean carbon sink under a changing climate,
- The changing role of biology in the ocean carbon cycle
- Carbon exchanges across the land-ocean-ice continuum
- The impact of ocean industrial processes on the ocean bio logical carbon cycle
- Future changes in the carbon cycle from deliberate ocean-based climate interventions.

To close the knowledge gaps identified within each focus area, a series of internationally coordinated approaches are required:

- Support for sustained ocean carbon observing systems,
- Integration of sensor technologies and platforms,
- Enhancement and co-ordination of carbon observing and synthesis products,
- Next level biological process studies and experiments, and
- Improved ocean carbon cycle models.

Strengthening global ocean carbon science is essential for effective climate action.

Global study identifies urgent blue carbon priorities in the fight against climate change

A major new international study warns that critical scientific and practical gaps are slowing the use of blue carbon ecosystems (BCEs) in global efforts to tackle climate change. Led by a team of international researchers, including Professor William Austin from the University of St Andrews, the research identifies the most urgent questions that must be addressed to scale up

ISSN 0306-7335

credible, equitable and effective blue carbon conservation and restoration worldwide.

The paper, published on Tuesday 24th March in Nature Ecology & Evolution, sets out a global agenda to accelerate progress in this rapidly developing field. Despite the significant potential of blue carbon to contribute to climate mitigation, only around 20% of eligible countries currently include blue carbon in their National Inventory Reports, representing a substantial gap in the opportunities offered under the Paris Agreement. Advances in measuring carbon stocks and fluxes in coastal and marine ecosystems have made it increasingly feasible to integrate blue carbon into national climate strategies, greenhouse gas inventories, and emerging carbon markets. This progress has driven global interest and accelerated research efforts, strengthening the links between science, policy, and on-the-ground action.

The paper, titled Priority questions for the next decade of blue carbon science, is intended as a guide for researchers, practitioners and policy makers facing the challenge of the need for robust evidence to underpin effective governance of BCEs as sites which, through conservation and restoration, have the potential to offset a further 1-3% of global greenhouse gas emissions. Professor Austin said: “This study brought together blue carbon experts from across the world as part of a major global initiative, the United Nations Ocean Decade of Ocean Science for Sustainable Development. By today, we are just past the mid-point of the Ocean Decade, with the need for multilateral cooperation in science and a vision for the protection and restoration of the world’s blue carbon habitats more urgent than ever.”

Biodiversity boost: 24 new deep-sea species discovered in major Pacific research

Researchers have announced the discovery of 24 new deep-sea amphipod species, including one new superfamily, from the Clarion-Clipperton Zone (CCZ), in the central Pacific Ocean. The discoveries, which were published on Tuesday 24th March as part of a new open-access ZooKeys special issue, mark a significant advance in identifying the biodiversity of the CCZ, an area which spans six million square kilometres between Hawai’i and Mexico.

24 new species of amphipod have been identified

Led by Dr Anna Jażdżewska, University of Lodz (UL), and Dr Tammy Horton, National Oceanography Centre (NOC), 16 experts and early-career scientists came together for a week-long taxonomy workshop dedicated to describing new amphipod species from the CCZ, which was organised at the Department of Invertebrate Zoology, Faculty of Biology and Environmental Protection, UL in 2024. Their findings form part of the International Seabed Authority’s Sustainable Seabed Knowledge Initiative (SSKI) and its ‘One Thousand Reasons’ project, which aims to describe 1,000 new species by the end of the decade. The research revealed a number of firsts for science, with 24 newly described species spanning 10 amphipod families, including predators and scavengers.

The team of researchers from research institutions from across the world, pictured together at the University of Lodz (Credit: University of Lodz)

Dr Tammy Horton said: “To find a new superfamily is incredibly exciting, and very rarely happens so this is a discovery we will all remember. With more than 90% of species in the CCZ still unnamed, each species described is a vital step towards improving our understanding of this fascinating ecosystem. Describing the

ISSN 0306-7335

species encountered during these studies is a critical step in documenting the rich biodiversity of the CCZ, enabling us to communicate effectively about the fauna."

Dr Anna Jażdżewska said: "This was a truly collaborative process that allowed us to achieve the ambitious goal of describing more than 20 species new to science within a year, something that would not have been possible if each of us worked independently. The team's findings provide information that is crucial for future conservation and policy decisions, and it highlights how important it is for this work to continue."

New species must each be named, and that honour falls to the research team who often draw inspiration from those around them. Many of the 24 new species have been given meaningful names by those who have spent time learning about them and describing them. Co-leads Dr Tammy Horton and Dr Anna Jażdżewska both saw species named for them, *Byblis hortonae*, *Thrombasia ania* and *Byblisoides jazdzewskae* (respectively). Dr Horton named one of the species in the new superfamily (*Mirabestia maisie*) after her daughter, who has waited several years to join her siblings in having that unusual honour.

There was an opportunity to pay tribute to the World Register of Marine Species (WoRMS), with *Eperopeus vermiculatus* being given the name in recognition of WoRMS which researchers described as providing a 'wonderful resource for all marine taxonomists'. Involving early-career scientists (including students) also allowed them to leave their mark in the species names, by commemorating their relatives and by creating intriguing links between the deep sea and the virtual world. According to the author, one species, *Lepidepecreum myla*, resembles Myla (a character from a video game), as both 'are just little arthropods trying to survive in total darkness.'

The team also drew inspiration from linguistics for one species, with *Pseudolepechinella apricity* representing the spirit of warmth of friendship that came from the week-long workshop. Dr Horton revealed: "Apricity means the feeling of the warmth of the winter sun, and it is one of my favourite words. It was very apt to use during the workshop as we discussed our findings in the warmth of the February sun amid the snow of the Polish winter in Lodz. It was certainly fitting to also use it for one of our amphipod discoveries. We came together as research colleagues, but the spirit of collaboration and shared experience shone through, so it was important to recognise that in our work."

Tele-Illumination: A Novel Nature-Based Solution to Re-balance the Earth's Carbon Cycle

The rapid expansion of anthropogenic carbon emissions has fundamentally imbalanced the Earth's natural carbon cycle. While the ocean currently absorbs a significant portion of this excess CO_2, leading to widespread acidification, researchers from MyOcean Resources Ltd. have proposed a novel, scalable Nature Based Carbon Cycle Management Solution (NBCCMS). Published in February, and also to be included as a new book chapter this spring, the Earth Climate Optimisation Productivity Island Array (ECOPIA™) aims to capture excess anthropogenic carbon dioxide by empowering the ocean's natural primary production capacity through "tele-illumination".

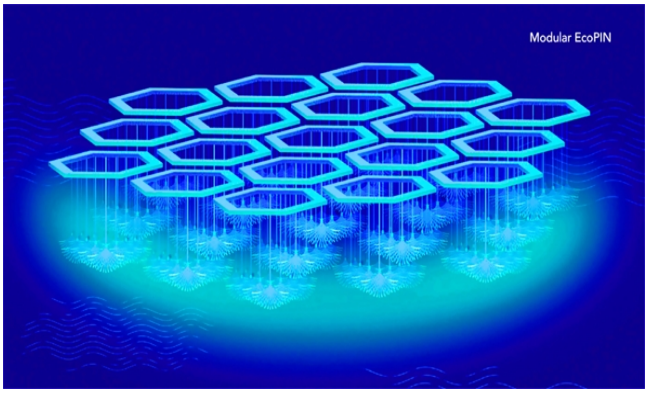
The ECOPIA™ programme targets the vast, nutrient-poor (oligotrophic) sub-tropical gyres of the world's oceans. These mid-latitude regions, which make up roughly one-seventh of the Earth's total ocean area, are characterised by deep, permanent mixed layers where the surface remains an oligotrophic desert all year round. Currently, these low-productivity gyres are expanding at a rate of 800,000 km² per year, encroaching on regions that previously supported higher near-surface chlorophyll concentrations.

Rather than altering the ocean's chemistry, such as through iron fertilisation or artificial upwelling, which have historically presented biodiversity and export challenges, ECOPIA™ simply provides light to the nutrient rich depths. The system relies on modular, floating geostationary structures known as "ECOPINs". Each ECOPIN consists of 19 hexagonal components featuring a central light-collecting "moonpool". Using advanced optical collectors and high-OH silica glass fibre-optic bundles, these highly buoyant structures harvest surface sunlight and channel it 150 to 300 metres below the surface.

By delivering light below the nutrient-depleted surface layer and the permanent thermocline, the

ISSN 0306-7335

ECOPINs create a new, continuous euphotic zone in the deeper surface ocean. Here, naturally occurring diverse microbial communities have access to limitless nutrient supplies moving past the geostationary light sources. Researchers estimate that this consistent diurnal growth environment will yield very high export-to-primary production ratios, as the resulting particulate organic carbon is synthesised below the mixing processes of the surface ocean, effectively locking it away.



An artist's impression of a modular ECOPIN

The scale of the proposed intervention is significant but geographically minimal. Calculations indicate that tele-illuminating less than 0.002% of the world's oceans could facilitate the uptake of approximately 10 Gigatonnes of carbon annually. If the world could achieve static anthropogenic fossil fuel usage by 2030, ECOPIA™ scaled to around 100 ECOPINs would eventually return atmospheric CO_2 levels to the recommended 350 ppm.



Importantly, the authors, from left to right John Allen (your Editor), Calum Fitzgerald and Lonnie Franks, emphasise that "ECOPIA™ is not a geo-engineering programme, but rather a tool to naturally support the biological pump without preferentially pressuring naturally determined biodiversity. With an estimated construction cost of $10 trillion USD, a fraction of the projected $187 trillion USD required for a complete global net-zero transition, the system could be self-financing through regulated Carbon Offset Credits as part of the mCDR industry. Multiple research programmes, including coupled ocean modelling, anthropogenic carbon measurements, and sustainable material development, will run concurrently alongside project development. Ultimately, the initiative presents a fascinating paradigm shift: managing our carbon output by boosting the photosynthetic side of the Earth's carbon cycle, allowing the oceans to naturally restore balance."

UK Royal Navy awards Teledyne contract for Autonomous Underwater Vehicles

Teledyne Marine, part of Technologies Incorporated (NYSE:TDY), is pleased to announce that it has been awarded a contract by the UK Ministry of Defence (MOD) in support of the Royal Navy's Future Maritime Data Gathering (FMDG), Persistent Oceanographic Data Collect, strengthening the Royal Navy's oceanographic and environmental data collection capabilities. Under this contract, Teledyne will supply numerous autonomous ocean observing systems, including Sentinel and Slocum gliders, APEX floats, and associated services, enabling the Royal Navy to expand its fleet of advanced unmanned technologies to collect high-quality oceanographic data in support of operational planning, maritime safety, and defence activities, directly supporting Atlantic Bastion.

Under the FMDG program, Teledyne's systems will deliver long-endurance data collection from complex and remote maritime environments, providing the Royal Navy with actionable and reliable environmental intelligence. The program builds on the Royal Navy's use of Teledyne Slocum gliders and reinforces the growing role of unmanned systems in Royal Navy and NATO naval operations. According to the Royal Navy's Direct award justification "Teledyne remains the only supplier able to guarantee seamless interoperability, security compliance, and mission readiness into the Current RN Glider Fleet."

Since 2015, Teledyne has supported the Royal Navy's oceanographic and environmental

ISSN 0306-7335

monitoring requirements through Slocum gliders, APEX floats and Gavia autonomous systems designed to operate reliably in demanding operational conditions. Teledyne's unmanned systems are widely used by naval, commercial, and scientific organizations worldwide for ocean observation and environmental data collection.

7th meeting of the Challenger Society Ocean Wind Waves Special Interest Group meeting

The meeting, on Tuesday 23rd June at Imperial College, London, will welcome contributions spanning the full spectrum of wave research, from fundamental physics to applied coastal and offshore engineering. We invite presentations addressing observational, theoretical, numerical, and experimental studies of waves across scales, including wind–wave generation, nonlinear wave dynamics, wave–current interaction, wave breaking and turbulence, spectral wave modelling, remote sensing of waves, and the role of waves in coastal and ocean processes. Contributions that link wave dynamics with coastal hazards, offshore infrastructure, climate variability, and air–sea interaction are particularly encouraged. The aim is to foster discussion across disciplines and communities working on ocean waves, promoting exchange between researchers using field observations, laboratory experiments, numerical modelling, and emerging data-driven approaches.

As part of the workshop programme, participants will have the opportunity to visit and actively engage in experiments at the Hydrodynamics Laboratory at Imperial College London. This interactive session will include demonstrations and hands-on discussion around several ongoing experimental facilities: short-crested wave generation in the Deep Water Basin, wave transformation over coastal bathymetry in the Coastal Flume, and wind–wave interaction experiments in the Double-Ended Wind–Wave Flume.

Attendees will be able to observe experiments in operation, discuss measurement techniques and scaling issues, and exchange ideas on how laboratory studies can inform field observations and numerical modelling of ocean waves. Register to attend the meeting at: https://noc-events.co.uk/form/waves-event-registration

First EDITO Call for Financial Support Launched

Last year closed with another productive edition of the Digital Ocean Forum, which invited European projects, initiatives and stakeholders involved in the co-creation of the European Digital Twin Ocean to meet, share ideas, and advance their plans. As the EDITO platform continues to upscale and evolve, we look forward to expanding the thriving network of ocean scientists, developers and research projects that are harnessing EDITO to support their work. We are thrilled that the first EDITO Call for Financial Support to Third Parties is now open towards that end, offering grants to selected European, national, regional or local projects to onboard their existing (final or close to final) applications, models, or datasets onto the EDITO platform.

In our shared mission to grow the European Digital Twin Ocean platform and community, EDITO will offer € 2 million in cascading grants to third parties. Call #1 focuses on existing (final or close to final) applications, models and datasets that are ready to be integrated into the EDITO platform. Projects developing interoperable applications or models that are relevant to ocean and coastal challenges are encouraged to apply, deadline**:** 6th May 2026.

AtlantiS Fellowship

The AtlantiS Early Career Researcher (ECR) Fellowship Spring deadline will be April 30th this year. The purpose of the fellowship is to support the career development of ECRs by enabling collaborative working with AtlantiS researchers, as well as access to AtlantiS facilities, data sets, model output and tools, and cruises. Financial support covers the costs for 2–4 month visits to AtlantiS facilities. The research carried out by the ECR during the Fellowship should enhance the AtlantiS objectives and build on the project's observations and/or modelling and/or technology

ISSN 0306-7335

development. To learn more and apply please visit the AtlantiS fellowship page.

Registration for the next PISCES training session is now open until 29 May 2026
This session is open primarily to beginners, but also to experienced users. The objective of this practical session is to explore different features and tuning possibilities of PISCES using one of the oceanic models, NEMO or CROCO. For more experienced participants, an additional session will be proposed to learn how to add a new biogeochemical tracer to the ocean model of your choice, NEMO or CROCO, in a more independent setting. We will also provide an opportunity to discuss your scientific topic and explore potential approaches for configuring your model to address your research question.

The training will take place from September 21st to 23rd, 2026 in Paris at LOCEAN (10/12 people max.).

- Registration is open to individuals with an academic background in oceanography and marine biogeochemistry, ideally with experience in ocean modelling using NEMO or CROCO.
- A good knowledge of the Unix environment is a prerequisite for this course.
- Priority will be given to master and doctoral students and post-doctoral fellows.

Please send us an email describing your motivation for participating in this training (max. 1 page) along with a CV (max. 1 page) to formation_pisces@locean.ipsl.fr.

Call for input to ad HOC #23 newsletter
Publication of issue #23 of the annual newsletter of the, now international, History of Oceanography Club, *ad HOC,* will be due in May this year. Each issue depends on contributions from members and from others, wishing to share relevant info. You are invited to send your contribution(s). As you will know from past issues, we welcome a range of articles, messages, invitations to, or reports from, conferences/meetings or exhibitions, information about new books and publications, interesting links, book reviews, etc. Perhaps a short contribution on a previous research ship, a particular research cruise, photos always welcome, an oceanographic tool/instrument, or a biography? Maybe news from your museum/institution/club/association ? If it relates to the History of Oceanography, in a wider perspective, we're interested, and although multi-page articles will be appreciated, input of a one-page communication is welcomed too.

HOC Historie van de Oceanografie Club

Want to see what it will look like ? Earlier issues of *ad HOC*, and more information about HOC, can be viewed on our website: www.historie-oceanografie.nl. Your contribution, as MS-Word file and written in the English language, is welcomed by 21st April 2026 at the latest. In case of questions, please don't hesitate to contact me. *ad HOC* will be disseminated as a pdf file to all on our address list. Contributors will get an 'off-print' of their contribution, also in pdf. Issues as well as articles will be on display on our website. We invite you to forward this e-mail (and info about HOC, see website) to interested friends and colleagues. If they want to be included in the addressee list: an e-mail address is all we need. Membership is free. Looking forward to receive Your contribution, **:- Kees Kramer, Editor *ad HOC*.**

Challenger Society for Marine Science Conference
42 years on from the first modern Challenger conference which was also held in Bangor; then organised by John Simpson, Paul Linden, Steve Thorpe and Roy Chester, and run by amongst others a very junior Ed Hill and Bill Turrell. The Challenger Society's biennial conference has become the UK's largest gathering of marine scientists. The conference has a broad remit, with interests stretching from the coastline to the deep ocean and spanning the globe, from pole to pole. The society is particularly keen to encourage students and early career marine scientists to showcase research. If you would like to give an oral presentation or to present a poster on your work, please submit your abstract here (deadline for submission is **28th May**):
https://forms.cloud.microsoft/e/nhpUKaQc4G?origin=lprLink

This year's keynote speakers for the conference are:

Emma McKinley (Cardiff University): *"The Ocean Research we need for the Ocean we*

ISSN 0306-7335

want: The role of ocean literacy beyond the UN Ocean Decade". **Emma** is a Senior Research Fellow at Cardiff University. Her research focuses on understanding the complex relationships between society and the sea, taking account of diverse perceptions, attitudes and values held by different communities and audiences, and considers how this insight can be used to support effective ocean governance. Recent projects include the UKRI funded Transformative Action Research for Resilient Coastal Communities (TRACC) project, the Maximising UK Adaptation to Climate Change (MACC) Hub, as well as contributing to SMMR project, Integrating Diverse Values into UK Marine Management, leading work on ocean literacy. Emma is the Academic Lead of the Severn Estuary Partnership and is the founder of the Marine Social Science Network, a global, interdisciplinary community of marine social science researchers and practitioners. She sits on the UK's National Decade Committee for the UN Ocean Decade, the International Science Advisory Group for MEOPAR and the IOC-UNESCO's Global Group of Expert on Ocean Literacy. She is a member of the Wales Coasts and Seas Partnership and sits on the Steering Group for the Wales Ocean Literacy Coalition.

Gerard McCarthy (Maynooth University): *"The Atlantic on the edge: Where is the AMOC going and where has it come from?"*. **Gerard** is a physical oceanographer and climate scientist. His research focuses on the changing Atlantic, in particular, the Atlantic Meridional Overturning Circulation (AMOC) and sea level. He has been instrumental in studying the AMOC, the system of ocean currents that significantly affects Europe's climate. His findings have raised awareness of its potential weakening due to climate change, which could lead to significant impacts on Europe and globally. He is an internationally recognised researcher, being appointed co-chair of the JPI Oceans and Climate AMOC in Focus report in 2025.

Kate Hendry (British Antarctic Survey): *"Do you want ice with that? Biogeochemical changes in polar coastal oceans*". **Kate** is a chemical oceanographer and biogeochemist who was bitten early by the polar adventure bug, working in the Arctic and Antarctic since her graduate student days. Her research focuses on nutrient cycling in high-latitude environments, in particular the interfaces between land and sea, be it in the deep ocean or glaciated coasts. Kate's favourite element is silicon, but she also tries to talk about other things every now and then. She has a long history of supporting the Challenger Society, including co-founding the Equality, Diversity, Inclusivity and Accessibility working group, and, currently, sitting on Council as Honorary Secretary. She is also very enthusiastic about communicating science to everyone who needs to hear about it, from parliamentary briefing notes, podcasts and radio broadcasts through to writing a children's book.

Challenger Society members are invited to submit all kinds of images (paintings, drawings, collages ...) as well as photographs, for the 2026 Challenger Society Conference Presidents' Artistic Image Prize competition to be judged at the Conference. We are looking for images relating to marine science or the ocean that are beautiful, impressive, evocative, amusing, quirky or entertaining. The winning image will earn its creator a prize of £100.

The winner will be decided by the Society's President and the Immediate Past President. You may submit up to three images, and information about how to do this will be sent out shortly. Entries must arrive by 17 August. For each image, please provide a title, and a brief explanation of the context. Images should not have been created for commercial purposes, or have received any previous award. Photographic images should not have been significantly altered digitally (e.g. using Photoshop) or created with AI. They need to be at sufficiently high resolution to look good when printed, not just on screen. This means that the file size should be of the order of 1 Mb or more, not tens of kb. Images may be used in future publications of the Society, with the owner's permission.

ISSN 0306-7335

NOCA AGM 2026

Registration is now open for the 15th AGM of the NOC Association which will take place on Tuesday 19th and Wednesday 20th May 2026. This free, on-line event is open to all and will be conducted via Zoom, across consecutive mornings, each starting at 10:00 and ending at 12:15, with log on from 09:45, each day.

This year's AGM will include presentations on the role of the NOC Association, updates on Marine Science UK (MSUK), the Marine Facilities Advisory Board, shaping the future of the UK's national marine science capabilities and infrastructure, the Atlantic Climate and Environment Strategic Science (AtlantiS) programme, the Antarctica InSync Programme, how NERC's funding landscape is changing, and the Horizon Europe programme and UK engagement. For any questions about the NOCA or the AGM, please email Jackie Pearson, Secretary to the NOCA.

VIEWS

Challenger History talks

You will probably know that for the last year we have had ocean history talks on zoom at 5pm on the third Wednesday of the month. They have all been really interesting. If you missed any, recordings of most are available on the Challenger Society Youtube channel: https://www.youtube.com/channel/UCABGwm9YiLHn1oD_vsLWxHA

The main purpose of this post is to get your views on how we should continue with the talks, assuming that we do continue. For example, 5pm is not the best time for everyone. This has been reflected somewhat in the number of people online stabilising at 15-20: maybe we could have more attendees at another day and time ? We are also in need of additional speakers. While we have 2 or 3 offers still to call on, we would like to have more possibilities so that we can have a full season of talks without large gaps in between. The talks are, by the way, not restricted to members of the Challenger Ocean History SIG (Special Interest Group). Anyone can tune in. Please spread the word if you can.

Some other things while we're at it. We presently have 65 members on this mailing list. Do you have friends/colleagues who might like to join ? Are there activities, besides talks, you would like the SIG to pursue ? Would you like to have a SIG get-together at the forthcoming Challenger Society Conference in Bangor ? And if you have any other comments about the SIG please send them along as well. We'll do our best to take things forward, OCEAN-HISTORY@JISCMAIL.AC.UK. ***:- John Gould and Phil Woodworth***

MASTS Marine Biogeochemistry Forum

Shortly after the Ocean Sciences meeting in Glasgow, in February, members of the MASTS Marine Biogeochemistry Forum had the pleasure of helping to host a BIO-Carbon international workshop on the Biological Carbon Pump. BIO-Carbon is a NERC funded directed programme addressing the role of biological processes in how the ocean absorbs and stores atmospheric carbon dioxide, with key aims of the programme to enhance our understanding of key biological processes and improve their representation in global IPCC class models.



(Left) Alex Poulton introducing MASTS and the Marine Biogeochemistry Forum to the workshop; (Middle) MASTS members (Robyn Tuerena, Alex Poulton, Sarah Cryer and Ben Fisher) attending the workshop; (Right) Plenary discussion session on key processes influencing alkalinity cycling

The workshop in Glasgow brought together a diverse international community, with ~120 Biological Carbon Pump researchers working together over 3 intense days to identify key improvements that can be made in existing global models in 10 key themes. These themes ranged from how ocean biology impacts the cycling of alkalinity in the ocean to the

ISSN 0306-7335

importance of vertical migrations and microbes in the re-distribution of carbon in the water column.

With a mix of early career researchers, observationalists, experimentalists, and modellers there were numerous insightful discussions which resulted in a shortlist of 10 key processes that will form a roadmap from the workshop to be published later in the year. Watch this space for more details.

Invitation to Take Part in Horizon Scanning Survey for Early-Career Academics
Government reach out to let you know that the Government Office for Science have launched a survey this week inviting early career academics across a broad range of disciplines to provide insights into new and emerging technologies.

Survey link: Horizon Scanning for Emerging Technologies: Survey of Early-career Academics – Fill in form

The survey is open until Thursday 30th April and we are seeking perspectives from researchers working in science, engineering, health, environment, social science and related fields on emerging technologies, long term trends, weak signals, and potential disruptions that could shape the UK over the next 10–15 years.

Participants do not need to work in a field they would describe as “emerging technology”. We are keen to hear from researchers who are aware of new, developing or rapidly changing technologies within their own discipline or application area, even if these are not labelled as “emerging tech”. Responses will inform forward looking science advice to government and add academic perspectives to the published GO-Science Trend Deck, which sets out evidence based long term trends and drivers of change.

It would be fantastic if you could share this with relevant people in your network, such as early career researchers, postdoctoral fellows, PhD researchers, and interdisciplinary or applied research groups. We have launched this across our social media accounts, so it would be great if you could interact with our post to push this survey out further. Please share across your networks on LinkedIn and Instagram.

SALTS

Seabirds could inspire new generation of GPS-free navigation technology
The future of autonomous travel, from driverless cars to planetary rovers, may lie in decoding the secrets of how seabirds navigate. A cross disciplinary team from the Universities of Liverpool and York is developing novel technology that captures the world through a bird’s-eye view, paving the way for the possibility of navigation systems that don’t rely on GPS. Seabirds such as the Manx shearwater are famous for travelling vast distances to find food and then navigating back to their nests. Yet it is still not well understood how they achieve this feat.

In this project, scientists will use sensors no bigger than a fingernail and built with the latest semiconductor technology to measure the information birds encounter while they are flying. These miniature devices will also act like tiny “digital brains”, using machine learning to analyse and interpret sensory information as the birds experience it. By doing this, the team will be able to discover how the birds combine different environmental signals to make remarkably accurate navigation decisions. The two-year project, funded by the UK Research and Innovation (UKRI) Cross Research Council Scheme, is led by the University of York, who are developing the next-generation sensor and computing technology, working in close collaboration with animal behaviour researchers at the University of Liverpool.

The project leader is Chun Zhao, a Lecturer from the School of Physics, Engineering and Technology at the University of York. He said the project uses technology similar to microchips found in mobile phones but adapted to be smaller, more powerful and robust. “We plan to

ISSN 0306-7335

use cutting-edge, miniaturised hardware to understand how seabirds make navigation decisions," Zhao said. "The sensors capture natural signals and allow us to process data in real-time to find patterns in how seabirds compile this information to make navigation decisions."

The goal is to transfer this natural intelligence into a digital system to build bio-inspired autonomous navigation systems. Current aviation and shipping rely heavily on GPS but the signal is vulnerable to jamming and spoofing making locations unavailable or incorrect. This issue currently affects over a thousand commercial flights daily near conflict zones. The technology could also be applied to space exploration where GPS is unavailable."On Mars there is no GPS because there are no GPS satellites orbiting it," Zhao explained. "Right now, fully autonomous navigation on Mars is an engineering challenge. We think this seabird-inspired technology could one day enable a robot that learns to navigate the planet entirely on its own."

Dr Ollie Padget from the University of Liverpool's School of Environmental Sciences, added: "Seabirds achieve unbelievably efficient navigation, even from places they have not previously visited, and do so without the help of satellites through an unknown learning mechanism. This project has the potential to bridge this gap in our understanding." By learning how birds might rely on environmental signals and features, the data will help policy makers to see if renewable energy sites might accidentally disrupt the environmental signals birds rely on, helping to prevent any harmful impact on their journeys. The project is expected to begin in spring 2026.

Moby Dick 'ship sinking' sperm whales caught headbutting on camera

New research from the University of St Andrews reports sperm whales headbutting one another. The behaviour was captured on film and described scientifically for the first time, confirming accounts by 19th century mariners of sperm whales using their heads to deliberately push and strike objects, occasionally even sinking ships, thereby inspiring Herman Melville's classic tale Moby Dick. Using drone technology, researchers were able to film sperm whales headbutting each other, as well as the surrounding behavioural and social context. The images were filmed during fieldwork in the Azores and Balearic islands between 2020 and 2022.

The paper, published in Marine Mammal Science also shows how sub-adult whales engaged in this headbutting activity, rather than between large males as was previously hypothesised. This new discovery raises intriguing questions about the function and consequences of such behaviour on group cohesion and social dynamics. Lead author Dr Alec Burslem, who carried out the research whilst at the University of St Andrews in collaboration with researchers at the university of the Azores and Asociación Tursiops (an NGO based in the Balearic islands), said: "It was really exciting to observe this behaviour, which we knew had been hypothesised for such a long time, but not yet documented and described systematically."

More observations will be needed to understand the function of this behaviour but the widespread use of drones in the field will offer increased opportunities for observations of this as well as other, as yet unseen, near-surface behaviours. There is speculation as to whether sperm whale headbutting may have originated from physical contests between sperm whales. Some hypothesised that this behaviour may be a widespread part of male-male competition but

ISSN 0306-7335

occurs under the surface and therefore be difficult to observe from boats. Others argued that habitually using the head as a weapon was unlikely to have been favoured by evolution, as it would endanger structures in the head which are vital for producing sounds used for echolocation and social communication.

The use of the head by sperm whales to push and strike objects has been reported anecdotally since the open-boat whaling of the 19th century. The most famous example is that of Essex, a 27 metre sail powered whaleship which was reported to have been sunk by two head-on strikes from a large bull sperm whale off the Galapagos in 1820 and which inspired Herman Melville's novel 'Moby Dick'. Owen Chase, First mate upon the Essex described the force of the whale's headbutt in a contemporaneous report quote "I turned around and saw him about one hundred rods [approx. 500 m] directly ahead of us, coming down with twice his ordinary speed of around 24 knots, and it appeared with tenfold fury and vengeance in his aspect. The surf flew in all directions about him with the continual violent thrashing of his tail. His head about half out of the water, and in that way he came upon us, and again struck the ship."

Other similar accounts of whaling ships being sunk by sperm whales include the sinkings of Ann Alexander and Kathleen in the 19th century. Dr Burslem, who is now based at the University of Hawaii, added: "This unique overhead perspective for observing and documenting near-surface behaviour is just one of the ways drone technology is transforming the study of wildlife biology. It's exciting to think about what as-yet unseen behaviours we may soon uncover, as well how more headbutting observations may help us to shed light on the functions the behaviour may serve. If there are people out there with similar footage, we would be very keen to hear from them".

CALENDAR

3rd-8th May 2026: European Geophysical Union General Assembly 2026

Vienna, Austria and Online

The EGU General Assembly brings together geoscientists from all over the world to one meeting covering all disciplines of the Earth, planetary, and space sciences. The EGU aims to provide a forum where scientists, especially early career researchers, can present their work and discuss their ideas with experts in all fields of geoscience.The registration for the EGU General Assembly 2026 is now open.

ITS1.19/AS4.8 Advancing Environmental sciences with Innovation and Research Infrastructures. Co-Convened by the GEORGE and the ENVRINNOV EU projects; read the full description: https://www.egu26.eu/session/57671
This dedicated session at EGU 2026 will focus on innovation across environmental domains atmospheric, marine, terrestrial, and solid earth sciences. It will cover topics on the role of emerging technologies and service-oriented approaches in shaping the future of environmental monitoring. The session is aimed at all industry professionals, researchers, and students interested in innovation in environmental sciences, including Research Infrastructures (RIs), private companies offering scientific instrumentation or services, industrial end-users and policymakers.

OS4.8 The Copernicus Marine Service and the European Digital Twin of the Ocean. The Copernicus Marine Service provides regular and systematic reference information on the physical (including sea-ice and wind waves) and biogeochemical states of the global ocean and European regional seas. This capacity encompasses the description of the current ocean state, the prediction of the ocean state a few days ahead, and the provision of consistent data records for recent decades. In the coming years, Copernicus Marine will implement next-generation ocean monitoring and forecasting systems and prepare new services for the coastal ocean and marine biology. Copernicus Marine will also progressively embrace the new capabilities of digital services in synergy with the European Digital Twin of the Ocean (DTO) developments.

ISSN 0306-7335

The European DTO will connect and interoperate, on a common digital platform, a large variety of ocean and coastal numerical tools, allowing for global, regional-to-coastal model configurations and the co-development of new simulations and what-if-scenarios for enhanced on-demand ocean forecasting and ocean climate prediction.

The session focuses on the main Copernicus Marine Service research and development activities on ocean modelling; data assimilation; processing of observations, impact and design of in situ and satellite observing systems; verification, validation, and uncertainty estimates; monitoring and long-term assessment of the ocean physical and biogeochemical states. The session also includes research activities dedicated to the next generation of ocean monitoring and forecasting systems (improved Arctic monitoring, ensemble forecasting, regional ocean climate projections, use of artificial intelligence) and new services for the coastal ocean and for marine biology.

The session will also encompass research activities on the development of the European DTO, including the next generation of ocean models combining artificial intelligence and high-performance computing, dedicated infrastructures and platforms as well as protocols and software and the definition of what-if-scenarios. Presentations are expected from research teams involved in the Copernicus Marine Service, in the European DTO, in the development of in situ and satellite observing systems and of downstream applications and in relevant Horizon Europe projects. Contributions from the international OceanPredict community and from the relevant UN Decade programmes and projects are expected..

11th-13th May 2026: ECSA Focus meeting, Advances on the Coasts and Estuaries of Eastern Scotland

Edinburgh, Scotland, UK

Registration is now open as the Estuarine and Coastal Sciences Association will once again be running one of its popular Focus Meetings. This meeting will focus on the Coasts and Estuaries of Eastern Scotland. The meeting will cover a wide range of topics ranging from novel science to restoration, pollution control, nature conservation, recreation, and the activities of local special interest groups. The informal atmosphere of the Focus Meetings provides an ideal opportunity for students and early career scientists to present their work. If you are interested in contributing a paper or poster, please contact the following for further information: Andrew Wither or Professor Teresa Fernandes.

19th-20th May 2026: NOC Association Annual General Meeting 2026

Online

The 15th AGM of the NOC Association will be held on Tuesday 19th and Wednesday 20th May 2026. This free, online event will take place on Zoom, across two consecutive mornings, each starting at 10:00 and ending at 12:30. The registration page and details of the agenda will be available shortly and all are warmly welcome to participate. For any enquiries, either about the AGM or the NOC Association, please contact Jackie Pearson, Secretary to NOCA: jfpea@noc.ac.uk

25th-29th May 2026: Liège Colloquium

Liège, Belgium

Dear colleagues, for the 57th International Liège Colloquium "Submesoscale Processes in the Ocean" please visit https://www.ocean-colloquium.uliege.be. The colloquium will be in hybrid mode, but we would really like to see you here in person. Link to terms of reference: https://www.ocean-colloquium.uliege.be/overview .

Confirmed Keynote Speakers:
Alice Della Penna (University of Auckland)
Channing Prend (University of Edinburgh)
Amala Mahadevan (Woods Hole Oceanographic Institution)
Jacob Wenegrat (University of Maryland)
Ananda Pascual (IMEDEA, CSIC)
Abigail Bodner (Massachusetts Institute of Technology)
Patrick Marchesiello (LEGOS, IRD, France)

We will also host a hands-on training session on the study of submesoscale processes using satellite data, organized by EUMETSAT. We are looking forward to seeing you in Liège.

9th-10th June 2026: Structures in the Marine Environment 2026 Conference

ISSN 0306-7335

Newcastle, UK
Showcasing the latest science on marine artificial structures in the North Sea, Join researchers, policymakers and industry to explore the latest science on Marine Artificial Structures in the North Sea.

Join us on Day 1 to hear presentations on:

- Decommissioning and expansion in a nature-positive era
- Understanding the risks and opportunities of lesser-known marine artificial structures
- How communication and meaningful consultation can support a just, nature-positive offshore energy transition
- Building transparent and defensible decision-making frameworks for the offshore energy transition

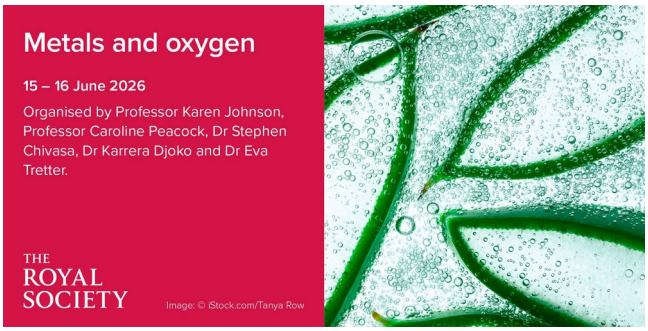
On Day 2, in the morning, you'll hear presentations on:

- Policy conflicts and co-benefits across climate, nature, and energy security
- End-of-life solutions and the future of repowering, reuse, and circularity in offshore energy

In the afternoon, two workshops will be held, from 2:00pm - 4:30pm. Please let us know if you wish to attend a workshop. Further details to be announced. Please register to secure your place and visit the following page if you wish to submit an abstract:

15th-16th June 2026: Scientific discussion meeting at the Royal Society, about the role of metals and oxygen in planetary and human homeostasis.
London, UK
This meeting will be led by Professor Karen Johnson from Durham University, Professor Caroline Peacock from the University of Leeds, Dr Stephen Chivasa from Durham University, Dr Karrera Djoko from Durham University and Dr Eva Tretter from the Medical University of Vienna. Geoscientists, bioscientists and health scientists will come together to explore the role of metals and oxygen in governing the molecular processes that control homeostasis in plant, animal and planetary geochemical cycles.

During this transdisciplinary meeting, speakers will draw parallels between how metals and oxygen control redox at the human scale, and at the planetary scale. Participants will consider how metals and oxygen shape the circadian rhythms that connect humans to the Earth System.



There will be a poster session on Monday 15th June 2026. Attendees can apply to present a poster. This meeting is intended for researchers in relevant fields. Advance registration is essential. In-person and online attendance is available. More information about the speakers, programme and how to register for this meeting can be found on the Royal Society website.

23rd June 2026: 7th meeting of the Challenger Society Ocean Wind Waves Special Interest Group meeting
London, UK
The meeting, at Imperial College, London, will welcome contributions spanning the full spectrum of wave research, from fundamental physics to applied coastal and offshore engineering. We invite presentations addressing observational, theoretical, numerical, and experimental studies of waves across scales, including wind–wave generation, nonlinear wave dynamics, wave–current interaction, wave breaking and turbulence, spectral wave modelling, remote sensing of waves, and the role of waves in coastal and ocean processes. Contributions that link wave dynamics with coastal hazards, offshore infrastructure, climate variability, and air–sea interaction are particularly encouraged. The aim is to foster discussion across disciplines and communities working on ocean waves, promoting exchange between researchers using field observations, laboratory experiments, numerical modelling, and emerging data-driven approaches.

As part of the workshop programme, participants will have the opportunity to visit and actively engage in experiments at the Hydrodynamics

ISSN 0306-7335

Laboratory at Imperial College London. This interactive session will include demonstrations and hands-on discussion around several ongoing experimental facilities: short-crested wave generation in the Deep Water Basin, wave transformation over coastal bathymetry in the Coastal Flume, and wind–wave interaction experiments in the Double-Ended Wind–Wave Flume.

Attendees will be able to observe experiments in operation, discuss measurement techniques and scaling issues, and exchange ideas on how laboratory studies can inform field observations and numerical modelling of ocean waves. Register to attend the meeting at: https://noc-events.co.uk/form/waves-event-registration

23rd-24th June 2026: 13th PRIMaRE Conference

Loughborough, UK

We are pleased to announce the 13th PRIMaRE Conference, to be held at Loughborough University. As in previous years there will be a mixture of oral and poster presentations. The Conference welcomes researchers at all stages, along with industry and other stakeholders.

CONFERENCE TOPICS:

- Tidal/Ocean current energy
- Wave energy
- Offshore wind energy
- Economic, social, and policy aspects of marine renewable energy
- Environmental aspects of marine renewable energy

This free Conference welcomes researchers at all stages, along with industry and wider stakeholders, to participate in the presentations. The event welcomes contributions across a wide range of topics and disciplines, including engineering, environmental sciences, economics, and policy. The call for abstracts is now extended until **27th April**. To find out, more visit the Loughborough PRIMaRE website.

1st July 2026: Marine Measurement Forum # MMF71

Totnes, UK

Taking place at Dartington Hall, the one-day Marine Measurement Forum (MMF) 2026 is being hosted by Teledyne Valeport and will bring together professionals from across ocean science and marine technology. Expect expert talks, open discussion, strong networking and we're also launching a call for abstracts, welcoming presentation ideas from across the community. For further information view the website.

19th - 24th July 2026: International Coral Reef Symposium 2026

Auckland, New Zealand

ICRS is the largest conference for coral reef science, run by the International Coral Reef Society every four years, this time hosted by Victoria University of Wellington, New Zealand. Please visit the conference website for further information. The following sessions may be of particular interest for UK marine scientists engaged in coral reef research:

Session 10: From knowledge to action: Tools and stories to tackle water pollution
Session 19: Modelling coral reef ecosystems across scales
Session 21: Plastic pollution in coral reefs: from emerging evidence to future solutions
Session 52: Exploring the sustainability and resilience of coral reef fisheries
Session 60: Pelagic reefs: how oceanic inputs shape the structure and function of coral reefs
Session 67: A window on future oceans: forecasting multi-scale impacts of the Anthropocene on coral communities using extreme systems as natural laboratories
Session 99: Cross-habitat linkages and coral reef integrity in connected coastal seascapes
Session 116: Biodiversity and transformation in Indian Ocean coral reefs
Session 117: Understanding mesophotic coral ecosystems: The way forward
Session 128: Exploring the new, blue frontier: Coral reef science of the South Pacific

8th-10th September 2026: Challenger Society for Marine Science Conference

Bangor, UK

42 years on from the first modern Challenger conference which was also held in Bangor; then organised by John Simpson, Paul Linden, Steve Thorpe and Roy Chester, and run by amongst others a very junior Ed Hill and Bill Turrell. Since then, the Challenger Society's biennial conference has become the UK's largest gathering of marine scientists. The conference has a broad remit, with interests stretching from the coastline to the deep ocean and spanning the globe, from pole to pole. The society is

ISSN 0306-7335

particularly keen to encourage students and early career marine scientists to showcase research. If you would like to give an oral presentation or to present a poster on your work, please submit your abstract here (deadline for submission is **28th May**):
https://forms.cloud.microsoft/e/nhpUKaQc4G?origin=lprLink

We are delighted to announce our keynote speakers for the conference:

Emma McKinley (Cardiff University): *"The Ocean Research we need for the Ocean we want: The role of ocean literacy beyond the UN Ocean Decade"*. **Emma** is a Senior Research Fellow at Cardiff University. Her research focuses on understanding the complex relationships between society and the sea, taking account of diverse perceptions, attitudes and values held by different communities and audiences, and considers how this insight can be used to support effective ocean governance. Recent projects include the UKRI funded Transformative Action Research for Resilient Coastal Communities (TRACC) project, the Maximising UK Adaptation to Climate Change (MACC) Hub, as well as contributing to SMMR project, Integrating Diverse Values into UK Marine Management, leading work on ocean literacy. Emma is the Academic Lead of the Severn Estuary Partnership and is the founder of the Marine Social Science Network, a global, interdisciplinary community of marine social science researchers and practitioners. She sits on the UK's National Decade Committee for the UN Ocean Decade, the International Science Advisory Group for MEOPAR and the IOC-UNESCO's Global Group of Expert on Ocean Literacy. She is a member of the Wales Coasts and Seas Partnership and sits on the Steering Group for the Wales Ocean Literacy Coalition.

Gerard McCarthy (Maynooth University): *"The Atlantic on the edge: Where is the AMOC going and where has it come from?"*. **Gerard** is a physical oceanographer and climate scientist. His research focuses on the changing Atlantic, in particular, the Atlantic Meridional Overturning Circulation (AMOC) and sea level. He has been instrumental in studying the AMOC, the system of ocean currents that significantly affects Europe's climate. His findings have raised awareness of its potential weakening due to climate change, which could lead to significant impacts on Europe and globally. He is an internationally recognised researcher, being appointed co-chair of the JPI Oceans and Climate AMOC in Focus report in 2025.

Kate Hendry (British Antarctic Survey): *"Do you want ice with that? Biogeochemical changes in polar coastal oceans"*. **Kate** is a chemical oceanographer and biogeochemist who was bitten early by the polar adventure bug, working in the Arctic and Antarctic since her graduate student days. Her research focuses on nutrient cycling in high-latitude environments, in particular the interfaces between land and sea, be it in the deep ocean or glaciated coasts. Kate's favourite element is silicon, but she also tries to talk about other things every now and then. She has a long history of supporting the Challenger Society, including co-founding the Equality, Diversity, Inclusivity and Accessibility working group, and, currently, sitting on Council as Honorary Secretary. She is also very enthusiastic about communicating science to everyone who needs to hear about it, from parliamentary briefing notes, podcasts and radio broadcasts through to writing a children's book.

We can also accommodate Special Interest Group (SIG) meetings around the conference (on the 7th and 11th September) please contact Tom Rippeth for further information, t.p.rippeth@bangor.ac.uk. If you are interested in sponsoring events at the conference please contact Terry Sloan, terry@planet-ocean.co.uk. There may be other news of interest in the latest edition of the Bridge: https://www.bangor.ac.uk/sos/newsletter.

Challenger Society members are invited to submit all kinds of images (paintings, drawings, collages ...) as well as photographs, for the 2026 Challenger Society Conference Presidents' Artistic Image Prize competition to be judged at the Conference. We are looking for images relating to marine science or the ocean that are

ISSN 0306-7335

beautiful, impressive, evocative, amusing, quirky or entertaining. The winning image will earn its creator a prize of £100.

The winner will be decided by the Society's President and the Immediate Past President. You may submit up to three images, and information about how to do this will be sent out shortly. Entries must arrive by 17 August. For each image, please provide a title, and a brief explanation of the context. Images should not have been created for commercial purposes, or have received any previous award. Photographic images should not have been significantly altered digitally (e.g. using Photoshop) or created with AI. They need to be at sufficiently high resolution to look good when printed, not just on screen. This means that the file size should be of the order of 1 Mb or more, not tens of kb. Images may be used in future publications of the Society, with the owner's permission.

15th–17th September 2026: ICOS Science Conference 2026
Lund, Sweden
GEORGE will be at the ICOS Science Conference 2026, in Lund, Sweden and online. Members of the GEORGE EU consortium are convening a dedicated session, session 5, entitled "Advancing marine CO_2 observations through next-generation sensors, integration and platform innovation". Conveners: Laurent COPPOLA, (Sorbonne University), Socratis Loucaides (NOC), Edouard Leymarie (LOV/CNRS), Ute Schuster (Univ. Exeter), Simo Cusi (EMSO ERIC), Romain Cancouet (EURO-ARGO ERIC), Richard Sanders (NORCE and OTC-ICOS), Janne-Markus Rintala (ICOS ERIC)

Accurate in-situ quantification of oceanic CO_2 fluxes is crucial for the determination of global CO_2 fluxes with high confidence, due to spatial and temporal variability that numerical models cannot always identify. Yet this remains a major challenge for carbon cycle research. Progress now depends on the development and convergence of innovative technologies (sensors, samplers) that can deliver long-term, high-quality measurements across diverse ocean environments.

This session will bring together projects, research infrastructures and institutes working to improve marine CO_2 observing technologies, from novel autonomous sensors to integrated observing platforms such as gliders, floats, buoys, moorings and surface vehicles. Discussions will address sensor calibration and validation, data interoperability, and the integration of these technologies into operational networks such as European Infrastructures (ICOS, EMSO, Euro-Argo) and international networks (SOCONET). Initiated by the Horizon Europe project GEORGE, which co-develops and demonstrates next-generation sensors and integrated platforms across European Research Infrastructures, this session also welcomes contributions from related initiatives, including those exploring new observational data analysis and quality control methods and tools including Artificial Intelligence. By fostering exchanges across disciplines and communities, the session aims to define a shared technological vision for the future European and global marine carbon observing system. Read more at https://george-project.eu/2026/01/26/george-at-icos-science-conference-2026/

15th–18th September 2026: ICES Annual Science Conference 2026
Brest, France
There are 18 theme sessions and 7 network sessions covering topics like:

- Advancing integrated and ecosystem-based fisheries management
- Climate change impacts on marine systems
- Fisheries science and sustainability
- Human pressures, impacts, and mitigation
- Innovation, technology, and data for marine science

Explore all the sessions here.

8th–10th October 2026: Arctic Circle Assembly
Reykjavik, Iceland
The call for Session Proposals is now open. Governments, universities, companies, research institutions, organizations, associations, and others are invited to submit Session proposals for the 2026 Arctic Circle Assembly. Deadline for submitting proposals is 23:59 May 1, 2026, Alaska Standard Time (AKST). Open call for the 2026 Frederik Paulsen Arctic Academic Action award.

28th-30th October 2026: Global eDNA Conference
Seattle, USA

ISSN 0306-7335

Hosted in partnership with the Marine Technology Society's MTS eDNA Committee and the University of Washington's eDNA Collaborative, the conference will convene a global community of eDNA enthusiasts from across economic sectors to build connections, learn from one another, and further advance eDNA science. The conference will feature three days of concurrent sessions, focusing on a diverse array of eDNA-related topics (e.g., conservation applications, quantitative analysis, community engagement, policy-relevant communication, technological development, and many others), as well as a set of plenary speakers and plenty of unstructured time to make connections on your own.

10th-12th November 2026: MASTS 2026 Annual Science Meeting
Glasgow, Scotland

We hope you can join us later this year in Glasgow for the sixteenth Marine Alliance for Science and Technology Scotland (MASTS) Annual Science Meeting (ASM). This cross-disciplinary event will bring together members of the marine science community to promote and communicate research excellence and foster new scientific collaborations. Add the date to your diary and don't miss out.

13th-17th November 2026: International Marine Conservation Congress 2026
Edinburgh, Scotland
The 8th International Marine Conservation Congress; the world's largest gathering of ocean conservationists, bringing together 800+ researchers, policymakers, practitioners, educators, artists, and community leaders. Our mission ? Making Marine Science Matter by connecting science to real-world conservation action.
Including::

- Symposia & Panel Discussions
- Workshops & Short Courses
- Focus Groups
- Art-led Conservation Engagement (visual art, performance, documentary films)
- Plenary Speakers

Sessions will be scheduled November 13th-16th. Abstract submissions for talks and posters open soon. Ready to contribute? Login to the IMCC submission platform with your SCB credentials (or create a new account): Questions? Email scbmarinecomms@gmail.com

17th-20th November 2026: World Conference on Marine Biodiversity 2026
Bruges, Belgium
Submit your research for a session on ocean acidification at the World Conference on Marine Biodiversity 2026. This call welcomes diverse contributions from laboratory, field, to modelling and conceptual studies. During the session, the Decade Programme Ocean Acidification Research for Sustainability (OARS) will highlight innovative solutions to strengthen cross-regional collaboration and advance collective understanding of ocean acidification. Find more information here.

7th-9th April 2027: 2027 Ocean Decade Conference
Rio de Janeiro, Brazil
Co-organized by the Intergovernmental Oceanographic Commission (IOC) of UNESCO, Brazil's Ministry of Science, Technology and Innovation (MCTI), and the City of Rio de Janeiro, the 2027 edition will build on the outcomes of the 2024 Ocean Decade Conference in Barcelona, Spain, and carry forward the ambitions and milestones of the Ocean Decade; UN Decade of Ocean Science for Sustainable Development 2021-2030 ('Ocean Decade').

The CSMS email address is challenger.society@gmail.com. Contributions for next month's edition of Challenger Wave should be sent to: john@myocean.co.uk by the 30th April.

ISSN 0306-7335

JOBS and OPPORTUNITIES

UEA Faculty of Science
School of Environmental Sciences

Sir Anthony Habgood Professor of Climate and the Environment
Ref: ATR1739

Salary: Professorial scale. An attractive remuneration package is available for an outstanding candidate.

The University of East Anglia (UEA) is pleased to announce the creation of a new Professor (Chair) position, made possible through philanthropic support: *the Sir Anthony Habgood Professor of Climate and the Environment*, in the School of Environmental Sciences. This indefinite professorial appointment represents a strategic investment in advancing and extending climate change research at UEA.

This is a tremendous opportunity to advance your academic career in a world-leading, vibrant and interdisciplinary environment, and to make a difference.

We seek an inspiring, innovative and dedicated person to lead world-class research in any aspect of climate and the environment. This post is open to applicants with exceptional track records in a broad range of relevant areas, including:

- Coastal science and coastal change
- Climate change observations, projections and impacts
- Societal understanding and responses to climate change
- Ocean, atmosphere and Earth system processes and dynamics

The role brings the opportunity to work closely with existing areas of research excellence at UEA, such as the Climatic Research Unit (CRU), the Tyndall Centre for Climate Change Research, the Collaborative Centre for Sustainable Use of the Seas (CCSUS), and the Centre for Ocean and Atmospheric Sciences (COAS). Joining one or more of these active research groups will provide you with an academic home, collaborative working and leadership opportunities.

You will be expected to lead world-class research on climate and the environment, enhancing our understanding of global change and associated hazards to inform or promote societal responses. You will lead and contribute to national and international collaborative funding bids and deliver high-quality and innovative publications, research outputs and impact. For the first five years, your teaching and administrative duties will be reduced to enable focus on leadership and research.

This full-time post is available from 1 October 2026 on an indefinite basis.
UEA offers a variety of flexible working options and although this role is advertised on a full-time basis, we encourage applications from individuals who would prefer a flexible working pattern including annualised hours, compressed working hours, part time, job share, term-time only and/or hybrid working. Details of preferred hours should be stated in the personal statement and will be discussed further at interview.

ISSN 0306-7335

We value diversity and are committed to creating an inclusive culture where everyone can thrive. We particularly welcome applicants with the protected characteristic of Sex [female] and Race [Black, Asian and Minority Ethnic] for this post, as they are currently underrepresented at this level within the School of Environmental Sciences. Appointment will be made on merit and all applicants will be scored against the same criteria.

Benefits include:

- **44 days annual leave** inclusive of Bank Holidays and University Customary days (pro rata for part-time).
- **Family and Work-life balance policies** including hybrid working and considerable maternity, paternity, shared parental leave and adoption leave.
- Generous **pension scheme** with life cover for dependants, plus incapacity cover.
- **Health and Wellbeing:** discounted access to Sportspark facilities, relaxation rooms, 320 acres of rolling parkland, wellbeing walks, Wellbeing Ambassador network, on-campus medical centre including NHS Dentist, Occupational Health and a 24/7 Employee Assistance Programme.
- **Campus Facilities:** Sportspark, library, nursery, supermarket, post office, bars and catering outlets.
- Exclusive shopping **discounts** to help cut the cost of household bills, childcare salary sacrifice scheme, Cycle to Work scheme and public transport discounts.
- **Personal Development:** unlimited access to LinkedIn Learning courses, specialist advice and training from our Organisational Development and Professional Learning Team.

Closing date: 17 May 2026

The University holds an Athena Swan Silver Institutional Award in recognition of our advancement towards gender equality.

For further information, including the Job Description and Person Specification, please see the online Candidate Brochure. For an informal discussion about the post please contact either Professor Ian Renfrew, Head of the School of Environmental Sciences (i.renfrew@uea.ac.uk), or Professor Tim Osborn, Director of the Climatic Research Unit (t.osborn@uea.ac.uk)
https://vacancies.uea.ac.uk/vacancies/2124/sir-anthony-habgood-professor-of-climate-and-the-environment-atr1739.html

ISSN 0306-7335

Job opportunities at CNRM in marine biogeochemistry modelling

2 job opportunities have just opened at CNRM (www.umr-cnrm.fr) as part of the french TRACCS research program and in collaboration with LOCEAN-IPSL:

1) Engineer in marine biogeochemistry (with a focus on the development/cleaning of PISCES tools) (24 months) :
in french : https://careers.flatchr.io/fr/company/meteofrance/vacancy/g8owlpgykaln63o1-ingenieur-en-appui-a-la-modelisation-de-la-biogeochimie-marine-avec-pisces-f-h/

2) Post-doc on the carbon cycle in PISCES-simple (24 + 12 months) :
in french : https://careers.flatchr.io/fr/company/meteofrance/vacancy/gqayv9loa7xn6lxe-chercheur-specialiste-en-biogeochimie-marine-et-des-interactions-cycle-du-carbone-oceanique-climat-f-h/
in english : https://careers.flatchr.io/fr/company/meteofrance/vacancy/v41qg9eylaa9k6xe-researcher-specializing-in-marine-biogeochemistry-and-ocean-climate-interactions-in-the-carbon-cycle-f-m/

Do not hesitate to contact us (Roland Séférian (roland.seferian@meteo.fr), Laurent Oziel (laurent.oziel@meteo.fr), Renaud Person (renaud.person@locean.ipsl.fr), Sarah Berthet (sarah.berthet@meteo.fr)) if you have questions on these positions.

There are jobs in the MASTS newsletter

New vacancies:

Visit our Vacancy Webpage to find all the positions listed below.

- ✔ MSCA Postdoctoral fellowship – Decoding Redox Behaviour: Multiscale Analysis of Oxidative Stress Responses in Benthic Biofilms – Sorbonne University
- ✔ PDRA in seabird movement and behaviour – University of Liverpool – apply by 23/4/26
- ✔ Coastal Ecologist – HBC – apply by 30/4/26
- ✔ Habitats Regulations & Environmental Impact Assessment Specialist – HBC – apply by 30/4/26
- ✔ Technician for Aquarium and Research – UWS – apply by 10/5/26
- ✔ Freshwater Ecologist – Severn Rivers Trust – apply by 12/5/26

New PhD studentships

Explore all internship opportunities

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