May 2024

Challenger Wave

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

NEWS

Professor Stephanie Henson receives Fridtjof Nansen Medal at the EGU General Assembly

The National Oceanography Centre (NOC) are proud to congratulate Professor Stephanie Henson, on receiving the European Geosciences Union's (EGU) 2024 Fridtjof Nansen Medal for distinguished research in oceanography at the EGU General Assembly in April. Steph has made an outstanding contribution to a topic of fundamental significance to Earth's carbon cycle: how phytoplankton populations and subsequent carbon fluxes, respond to climate variability and climate change.

Professor Henson's work has revealed new insights into the long-standing question of the processes driving phytoplankton blooms, through the combination of satellite data, global biogeochemical models and autonomous underwater vehicle data. Recognising that some of the outstanding questions in the field centre around how planktonic ecosystems will respond to climate change, she designed work to address this through analysis of both observations and model output. This work has led to new insights into the multiple stressors affecting planktonic communities, and climate change-driven trends.

Professor Henson has established an influential body of work examining the observational requirements for distinguishing climate-change driven trends and natural variability in phytoplankton populations. This work challenged the notion that trends in phytoplankton productivity were detectable in the relatively short satellite record, instead identifying the apparent trends as a response to natural variability, and quantifying the length and characteristics of a time series needed to truly identify a climate change trend. These works had a profound impact on the field. Her work on the magnitude and variability of organic carbon fluxes has challenged existing paradigms from the outset. For example, she developed, on the basis of observational data, a new algorithm to estimate carbon export, which predicted the magnitude of the biological carbon pump to be just half of previous estimates.

The insights to be gained by her unique approach of combining observations and modelling were again illustrated when she was able to develop spatially-resolved estimates for the flux of carbon in to the deep ocean on the basis of empirical algorithms. Professor Henson also was not afraid to challenge her own earlier work; when a later study found a contradictory result, she worked together with the researchers to develop a new paradigm for how remineralisation depth is determined in the twilight zone. This work revealed a seeming paradox in global patterns of biological carbon pump efficiency, which prompted numerous data- and model-based studies to attempt to resolve the discrepancies highlighted by her work.

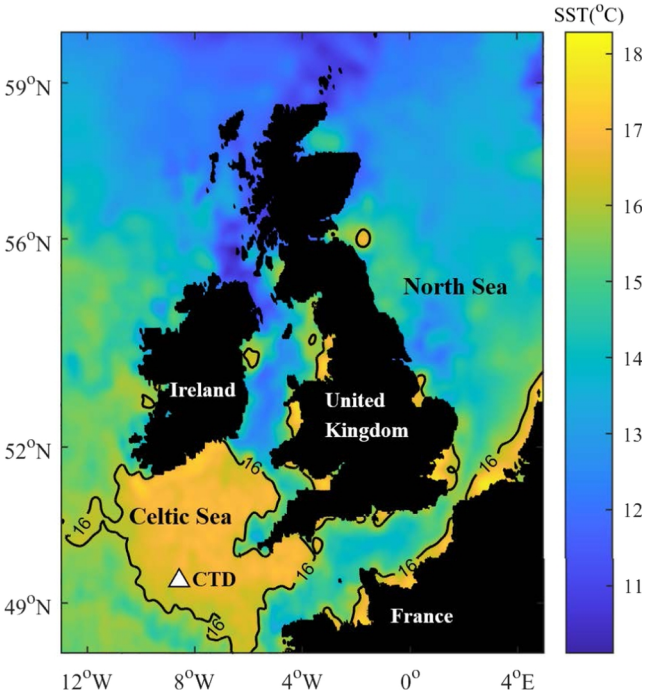
Listen to Professor Henson's Into the Blue podcast. Read about Professor Henson's outstanding scientific contributions through her role as a lead author on the latest IPCC Assessment Report on the 'Carbon and other biogeochemical cycles and feedbacks' chapter.

The deepwater oxygen deficit in stratified shallow seas is mediated by diapycnal mixing

Seasonally stratified shelf seas are amongst the most biologically productive on the planet. A consequence is that the deeper waters can become oxygen deficient in late summer.

ISSN 0306-7335

Predictions suggest global warming will accelerate this deficiency. Here we integrate turbulence time series with vertical profiles of water column properties from a seasonal stratified shelf sea to estimate oxygen and biogeochemical fluxes. The profiles reveal a significant subsurface chlorophyll maximum and associated mid-water oxygen maximum.



Map showing the northwest European shelf seas on which the location of the measurements is shown as a △. The map is contoured for daily averaged sea surface temperature at the beginning of the period of interest (19th June 2014). The areas with temperatures > 16℃ are the seasonally stratified Celtic Sea. The sea surface temperature (SST) is downloaded from NERC Earth Observation Data Analysis and Artificial-Intelligence Service (NEODAAS) Plymouth Marine Laboratory.

We show that the oxygen maximum supports both upward and downwards O_2 fluxes. The upward flux is into the surface mixed layer, whilst the downward flux into the deep water will partially off-set the seasonal O_2 deficit. The results indicate the fluxes are sensitive to both the water column structure and mixing rates implying the development of the seasonal O_2 deficit is mediated by diapcynal mixing. Analysis of current shear indicate that the downward flux is supported by tidal mixing, whilst the upwards flux is dominated by wind driven near-inertial shear. Summer storminess therefore plays an important role in the development of the seasonal deep water O_2 deficit. Read the full paper by Tom Rippeth and his co-authors in the journal, Nature Communications.

Govt launches £8m funding boost for AI to make boats and shipping smarter

Organisations can apply for the Smart Shipping Acceleration Fund to use AI for projects that make UK waters safer, operations smoother and air cleaner. The government has launched the fund to support feasibility studies for cutting-edge technology; from self-driving boats to ports using automated systems, in order to boost the economy and support coastal communities.

This funding forms part of the government's plan to decarbonise shipping and help grow the economy. The Smart Shipping Acceleration Fund will kickstart feasibility studies to develop smart shipping technologies such as AI, robotics, and autonomous vessels. The winning projects will also require match funding, everaging further investment from the private sector. Successful ports will be able to use AI to detect safety hazards, optimise port activities and reduce their environmental footprint, making UK waters safer, operations smoother and air cleaner. For more information click here.

Widespread microplastic pollution in Peruvian mangrove sediments and edible mangrove species

A New study shows that the mangroves of Tumbes, Peru are extensively contaminated with microplastic pollution, and estimate that the local inhabitants are likely ingesting up to 430 plastic particles per year by consuming certain commercially-important species from this area. Mangroves are valued for their high productivity, biodiversity, coastal protection and ability to lock away carbon but they have also been identified as a potential hotspot for microplastic pollution. Previous field studies have demonstrated that microplastic debris can become trapped in aerial roots or the interior scrub zone of the mangrove. There is also an indication that microplastics can accumulate in the underlying sediments, and be ingested by or adhere to a wide range of aquatic organisms, including commercially important species.

The edible mangrove crab and black ark (a filter-feeding shellfish) are of highest commercial value in Tumbes mangroves and support the nutrition and socio-economic wellbeing of inhabitants in the region. Research has shown

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the presence of microplastics in the gills and digestive tract of 30 mangrove crabs collected from local markets in the city of Tumbes and raised the question of whether this poses a risk to food security in the area. To help answer this question, a team of scientists from the Universidad Científica del Sur, Instituto del Mar del Peru (IMARPE) and Plymouth Marine Laboratory (PML), set out to establish the prevalence of microplastics in the sediments and in the commercially important mangrove crab and black ark of the mangrove ecosystem of Tumbes, as well as estimate the dietary exposure to microplastics in local populations.

The study, supported by the Global Challenges Research Fund (GCRF) project 'Reducing plastic waste in the Galapagos and Eastern Pacific', revealed that microplastics were identified in all sediment samples tested with concentrations ranging from 138 to 1462 plastics per kg. The ingestion of microplastics by local inhabitants from consuming black ark and mangrove crab was estimated as 431 microplastics per person per year. Consumers that eat microplastic-contaminated food, especially organisms that are consumed whole (i.e. including the gills and digestive tract where microplastics are prevalent) are at high risk of consuming microplastics. In Peru, both the edible mangrove crab and the black ark are consumed whole in traditional dishes, such as ceviche and parihuela.

The risks posed to humans from consuming microplastics may include oxidative stress, impacts upon gene expression and cell morphology, aggravating allergic diseases and genotoxic and neurotoxic effects. In addition to the direct environmental and human health impacts, there is concern that microplastics may act as vectors for disease, such as cholera, through bacterial colonization on particle surfaces, and help provide an ideal habitat for parasites and viruses, such as Dengue and Zika.

Lead author, Angelica Aguirre Sanchez, who visited PML to conduct the analysis, said; "despite Tumbes being one of the smallest regions in Peru, it has a great variety of ecosystems such as mangroves, dry forest, tropical forest, and the Grau tropical Sea. Having found microplastics in the mangrove sediment and in two economically representative species such as the black ark and mangrove crab during our research, we expected that this will contribute to decision-making by local authorities, raise awareness about the plastic issue among citizens, and serve as a base investigation for future research in the region".

Dr Matthew Cole, Senior Marine Ecologist and Ecotoxicologist at PML and co-author on the paper, commented; "activities, such as improper waste disposal, tourism, farming and shipping contribute to the widespread distribution of microplastics throughout the region, which is accumulating in sediments throughout the Tumbes mangrove. Notably, microplastic concentrations within the mangroves represent some of the highest microplastic concentrations in Peru, indicating that these mangroves are accumulating microplastics more readily than unvegetated habitats. The outcomes of this work highlights the risks this microplastic contamination may pose to the marine food web and food security in the area, which needs to be addressed urgently".

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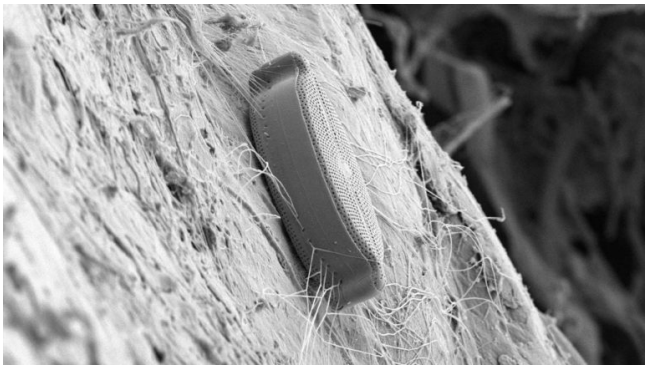
Are you interested in the communication of marine science? If so, read on ....
Ocean Challenge is the Challenger Society's bi-annual publication, which is open access online at the Society's website and also available as a conventional magazine for those members who prefer print. The *Ocean Challenge* Editorial Board is looking for new members. If you think you might be interested, and would like more information, please contact the Editorial Board Chair, Stephen Dye (stephen.dye@cefas.gov.uk) or the Editor, Angela Colling (AngelaMColling@gmail.com). Ideally, the Editorial Board should contain members from a range of marine related disciplines from a variety of institutions, if possible in different parts of the UK.

VIEWS

How deep do marine plastics go ?
In 1998, operators of a Japanese remotely operated vehicle (ROV) named *KAIKO* were surveying the depths of the Mariana Trench in the Pacific Ocean when they spotted something shocking on the vehicle's camera: a single-use plastic bag floating idly some 10.8 kilometres (6.7 miles) down at the Earth's deepest point. Since then, it's become clear that no part of the ocean is immune to plastic pollution.

Humans produce around 390 million tons of plastic each year, of which 14 million tons will end up in the ocean, making up at least 80 percent of all debris found in the sea, according to a 2021 UN environmental programme report. This marine debris makes its way into the ocean chiefly through rivers, stormwater runoff, and via wind that blows rubbish off coastal landfills. How plastic makes its way into the deep sea, however, has a lot to do with its chemical composition.

At the sea surface, plastics are exposed to corrosive saltwater, ultraviolet (UV) rays, and crashing waves that can break up these materials into finer particles. But not all plastics are created equal. Some, like Polyvinyl Chloride (PVC), found in products like credit cards, piping, and Intra-venus (IV) medical bag, are designed with durability in mind and can take much longer to degrade (up to 450 years, in some cases). Others, like polyethylenes, found in products like plastic grocery bags, soda and detergent bottles, and even children's toys, are not as resistant to UV light or stress cracking and can break down at much faster rates.



An image from a high-powered microscope reveals a microbe that has colonized a microplastic fragment, which over time will weigh it down causing it to sink. (Photo by © Erik and and Linda Amaral-Zettler, NIOZ Royal Netherlands Institute for Sea Research)

While the ocean chops, dices, and minces this plastic into smaller bits, organisms from bacteria to barnacles amass on them. This process, known as biofouling, can weigh plastics down, sinking them to lower depths. Over time, these particles can rain down alongside organic fecal matter, or marine snow, and may be eaten by midwater and seafloor organisms. Plastics that aren't consumed will eventually land on the seafloor, where deep-sea currents, called thermohaline currents, can sweep them into trenches, where they accumulate. This "trench trap" is so efficient at funnelling debris, that researchers have detected plastics in nearly all of the world's deepest trenches, including the Mariana Trench (10,924 m), the Philippine Trench (10,540 m), the Cayman Trench (7,686 m), and the Java Trench (7,450 m). ***:- Woods Hole Oceanographic Institution*** *(https://www.whoi.edu/know-your-ocean/did-you-know/how-deep-do-marine-plastics-go)*

RS Aqua invents innovative anomaly detection and acoustic data labelling software
RS Aqua is proud to announce a significant update to the MARLIN project. In collaboration with the University of Southampton, and supported by funding from Innovate UK, the MARLIN project is set to deliver several new technologies including a web application that can detect unusual underwater noise using machine learning, cloud connectivity and an intelligent network of underwater sensors. The latest

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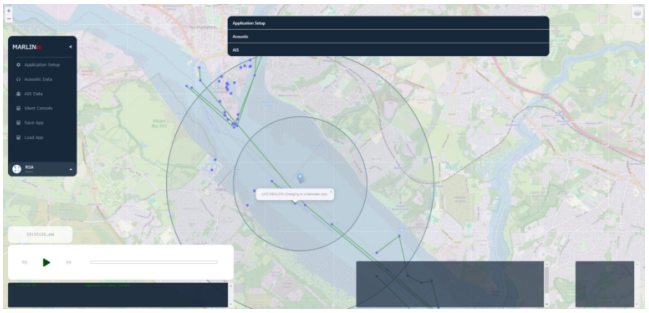
development in the MARLIN project is the successful creation of a software application that allows us to correlate historical automatic identification system (AIS) data and underwater noise signatures. By automatically linking acoustic signatures to individual vessels, this innovative software enables real-time visualisation of data on a geographic information system (GIS) platform and acoustic data labelling.

Demonstrating the new technology at the Underwater Sound Forum on 18th April 2024, Dr. Ryan Mowat, Director of Innovation at RS Aqua, elaborated on the significance of this advancement. “The new MARLIN software application represents a shift in ocean monitoring technology. For the first time, we can identify potentially illegal vessel activity in real-time using underwater noise. This capability will enhance our understanding of ocean ecosystems and strengthen efforts to combat unregulated fishing.”



This classification technology in the MARLIN project marks a crucial milestone in ocean conservation efforts. By utilising labelled acoustic data from vessels, we have the potential to identify and track illegal, unreported and unregulated (IUU) fishing activity, contributing to the protection of marine biodiversity and the sustainability of our oceans. The MARLIN team are now adding AI algorithms to the software application to automate the detection of IUU fishing. Martin Stemp, Managing Director at RS Aqua, added; “we are thrilled to continue our collaboration with Innovate UK and the University of Southampton in driving forward the MARLIN project, and we are confident that these advancements will have a profound impact on ocean monitoring, security and conservation efforts worldwide.”

SALTS

Student takes centre stage at first ever conference

A SAMS (Scottish Association for Marine Science) undergraduate student has been praised for presenting her research in front of an international gathering of seasoned scientists at her first ever academic conference. Nele Thomsen is a fourth year student on the BSc Marine Science Degree at SAMS, a partner of UHI, and attended the International Zooplankton Production Symposium in Hobart, Tasmania, organised by the International Council for the Exploration of the Sea (ICES) and the North Pacific Marine Science Organization (PICES).

After securing her place among the attendees with a poster presentation, the 24 year old was shocked to instead be asked to present her research on zooplankton at the conference, which attracted more than 300 scientists from 38 countries. “I was so nervous on that first day, as I’d never been to a science conference before,” said Nele. “But with time I felt more confident and I’ve met a lot of nice people who are as fascinated by zooplankton as I am. It’s been a great opportunity. I’ve made connections with people from Hong Kong, the US and Australia and it was amazing to experience Hobart, which is just heaven for marine scientists. I felt like I’ve grown up a bit in my career. I’ve found a research community of like-minded people, which has given me lots of new ideas and has further strengthened my determination to continue doing research.”

For her final year dissertation Nele has been investigating how two different groups of copepods, Acartia and Calanus, are impacted by copper and ocean warming, as well as how these factors impact their DNA. Attendance at the conference was the culmination of a summer 2023 internship and a dissertation funded by the Genetics Society and UK Environmental Mutagen Society (UKEMS), which included fieldwork and experimental work in collaboration

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with Dr Claudia Halsband from the Tromsø-based research institute Akvaplan-niva.

Nele was joined in Hobart by her SAMS supervisor Dr Helena Reinardy, who also presented at the conference. Student and supervisor met up with SAMS alumna Ilaria Stollberg at the University of Tasmania and, through a contact made at the conference, Nele was able to visit the Australian Antarctic Division laboratory in Kingston. Dr Reinardy said: "Nele was amazing and rose to the challenge, despite being nervous at what was her first ever conference. She was so professional that no-one could tell she was an undergraduate student. She has worked hard on her research and has excelled as a student, so deserves this opportunity."

Asked about a highlight from her fortnight in Tasmania, Nele recalled a moment at the conference dinner. "I saw quite a few of my 'research heroes' dancing to Columbian music. Suddenly, I had a picture and memories that showed a different and fun side to these established academic names."

CALENDAR

22nd–23rd May 2024: Structures in the Marine Environment (SIME) conference 2024
Edinburgh, Scotland
The INSITE Programme and MASTS are pleased to announce that the SIME 2024 conference will be held at the National Museums of Scotland, Edinburgh. Please register to secure your place for in-person and online tickets available.

Join us on Day 1 (9.00am-5.00pm) to hear the latest highlights from our research teams and a review of all the outputs across 4 years of the INSITE programme featuring Prof. Paul Fernandes, Prof. Joanne Porter, Ast. Prof. Antony Knights, Prof. Richard Thompson OBE, Dr Debbie Russell, Dr Tom Wilding, Prof. Dan Jones, Dr Sarah Gall, Dr Steven Watson, Dr Joshua Lawrence and more. We will be showcasing the research from INSITE's second phase, which is coming to an end later this year. Sign up to learn the latest about:

- Foraging patterns of marine predators.
- Applications of the UK autonomous fleet.
- Microbial biodiversity and biological connectivity, fish aggregation and blue carbon benefits of Marine Artificial Structures (MAS).
- The efficacy of decommissioning strategies.
- Artificial Intelligence and eDNA analysis approaches.
- And, the effects and implications of subsea plastics incorporated into Marine Artificial Structures.

On Day 2 (9.00am-1.00pm) we will be looking at the practical application of INSITE science. Learn about the policy landscape, drivers and challenges in offshore energy decommissioning and the energy transition to Net Zero. Learn about the effects, benefits and implications of Marine Artificial Structures, and discuss how cutting-edge, applied science can assist decision-makers and support delivery of future policies for sustainable management of our ocean.

3rd-4th June 2024: **NOC Association (NOCA) Annual General Meeting**
Online
On the planned agenda (to follow) items include updates from the Future of Marine Research Infrastructure (FMRI) initiative with discussion around potential gaps in the technology landscape. We look forward to welcoming Professor Gideon Henderson FRS, Defra Chief Scientific Advisor, who will talk briefly about COAST (Coastal Ocean Applied Systems Thinking), a cross government CSA committee, and discuss the challenges of delivering strong scientific evidence for policy decision making. A session is also planned around new stakeholder groups proposed for the British Oceanographic Data Centre and the NERC Environmental Data Service. This free on-line event is open to anyone with an interest in the marine environment. Further information and link to registration. For enquiries, please email Jackie Pearson, Secretary to the NOCA.

10th-14th June 2024: The 9th EGO meeting International Underwater Glider Conference
Gothenburg, Sweden
The International Underwater Glider Conference aims to bring together leading researchers, innovators, and experts from around the globe to exchange knowledge, share discoveries, and

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foster collaborations in the exciting realm of underwater gliders.

The conference promises to be an engaging platform for sharing insights, addressing challenges, and shaping the future of this field. We plan for presentations, workshops, poster sessions, and networking opportunities. The planning team will return to you with event registration, hotel suggestions, and more information about financial support during the coming months. In the meantime, I encourage you to mark the dates in your calendar.

19th June 2024: Marine Measurement Forum 66

Southampton, UK

The Marine Measurement Forum (MMF) is a series of one-day, non-profit making events that has been running since 1983 which provides excellent opportunities for networking and the informal exchange of ideas, knowledge, techniques and developments across an extensive range of marine scientific measurement activities.

During an MMF 'day' a series of short presentations on diverse marine measurement topics are interspersed with refreshment breaks that offer delegates the chance to network with like-minded colleagues. Attendees typically include scientists, surveyors, engineers and business people from a variety of organisations including research centres, academia, manufacturers, defence organisations, survey companies, consultancies, monitoring authorities, dredging companies, port authorities, energy companies and trade associations.

To submit an abstract to present please click here. Registration to attend the event is £45.00 per person this includes access to the meeting, refreshments and working lunch. To register to attend please click here.

8th-12th July 2024: AMEMR Conference 2024

Plymouth, UK

Welcome to the 7th AMEMR conference; full details at www.amemr.com/. The AMEMR (Advances in Marine Ecosystem Modelling Research) Symposium series provides an opportunity to present, discuss and learn about a wide variety of marine modelling challenges, methods, applications and outcomes.

Over the years AMEMR has grown into the forum to present and absorb the latest developments in marine (eco)system modelling and discuss new challenges and opportunities. It is a great place to develop networks and we encourage Early Career Researcher involvement. Check out the Themes and sessions for AMEMR 2024 at www.amemr.com/themes-and-sessions.html. You can also follow us on Twitter @amemr_updates.

9th July 2024: IMarEST Annual Conference 2024

Southampton, UK

Register for our Annual Conference, returning for 2024, where once again we'll bring together engineers, scientists, technologists and other professionals from across our membership for a day of debate, exploration and discovery. If you would like to present your work at the conference, provide the Events Team with some

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details and a copy of your presentation, events@imarest.org.

We've designed the day with three streams, making it easy for you join the discussions most important to you:

Technology - Demystifying fuel options and scrutinising the diverse fuel landscape, analysing available technologies, infrastructure capabilities, and long-term viability.

Human Contributions - Achieving emission targets and deconstructing the intricate web of regulations and political landscapes impacting them and the crucial role of state-led support.

Environment - Looking at the ripple effects of new fuel productions and evolving emission targets on the maritime industry's wider sustainability footprint.

2nd-6th September 2024: Challenger Society for Marine Science conference 2004
Oban, Scotland
Details of the conference are on the Challenger 2024 website: https://challenger2024.co.uk. Oban is a beautiful coastal location, but as a tourist destination accommodation gets booked up very quickly. If you are interested in attending, it is advised that you book accommodation as soon as you can. Accommodation options can be found on the conference website and there may also be an option for free camping at SAMS for those who would like to reduce costs, details to follow shortly.

10th-12th September 2024: ICOS Science Conference 2024, from GHG observations through science to services.
Versailles, France
ICOS (Integrated Carbon Observation System) is pleased to open the Call for Abstracts with the overarching theme “From GHG observations through science to services”, the sessions cover ICOS’s three domains, Atmosphere, Ecosystem and Ocean.

More information can be found here:https://www.icos-cp.eu/news-and-events/science-conference/icos2024sc/call-for-abstracts.
The ICOS Science Conference logo can be downloaded for this purpose here. Keep up-to-date with the latest ICOS Science Conference news on our channels:

- ICOS Science Conference website: https://www.icos-cp.eu/news-and-events/science-conference/icos2024sc
- ICOS Science Conference newsletter: https://www.icos-cp.eu/news-and-events/newsletters
- X (formerly Twitter): https://twitter.com/ICOS_RI
- LinkedIn: https://linkedin.com/company/integrated-carbon-observation-system
- Instagram: https://www.instagram.com/icosri/

23th-26th September 2024: IMBIZO7, Transitioning towards Sustainable Ocean Governance by 2030, Commitments and Challenges
Rabat, Morocco
IMBeR will hold its seventh IMBIZO (the Zulu word for 'a gathering') at the Institut Agronomique et Vétérinaire Hassan II (IAV) in Rabat, Morocco. IMBeR aims to promote and enable transdisciplinary marine research towards ocean sustainability and its governance. Topics addressed during IMBIZO7 will showcase current and emerging research, and explore potential solutions towards sustainable ocean governance by 2030, the target of multiple global sustainability initiatives.

We will follow the usual IMBIZO format of three distinct but interacting workshops. To optimise discussions, the number of IMBIZO7 participants will be limited to about 120 people (around 40 per workshop). The workshop topics are:

1. Science based adaptive management and policy responses to the causes and consequences of eutrophication.
2. A framework for development of social-ecological models of transformative change for sustainable ocean management.

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3. Governance transformations for resilient fisheries and aquaculture: Progressions, challenges and opportunities, imber.info/imbizo7-workshop-3/.

Plenary keynote presentations and poster sessions will enable you to learn about the work of participants in other two workshops.

14th-18th October 2024: 43rd CIESM Congress: Marine and Cultural Heritage in the Heart of the Mediterranean
Palermo, Italy
Join us after a 2-year hiatus imposed by the global pandemic and subsequent issues, we are excited to resume our traditional marine research showcase. This event will foster scientific excellence and promotes peaceful dialogue across the Mediterranean and Black Sea basins. Sicily, the chosen location for our next congress, offers a stunning backdrop, combining marine science with rich coastal heritage in a region steeped in cultural and historical significance.

Dive deep into the realm of open science with our first morning plenary panel. This strategic discussion will explore the benefits and challenges of open science practices, towards more sustainable and reliable scientific publication policies. Join leading experts debating on popular science, unbalancing and distorting science, incentives versus regulations, science marketing and non commercial licences, and ethical use of AI.

You can now register & submit your Congress paper online. Please, do not hesitate to contact us if you need any additional information, but be sure to check first our Congress webpages.

Our 2024 CIESM (The Mediterranean Science Commission, headquartered in Monaco) Congress will explore a wide range of marine disciplines, featuring multidisciplinary scientific sessions and contextual side events that will immerse you in the unique Sicilian atmosphere. Save the date and stay tuned for regular updates on the rich scientific and cultural programme throughout 2024.

17th-19th October 2024: Arctic Circle 2024 Assembly
Reykjavik, Iceland
For more information, http://www.articcircle.org, registration will open in early June.

5th-7th November 2024: Marine Alliance for Science and Technology, Scotland (MASTS), annual science meeting
Glasgow, Scotland
Can you believe that the MASTS ASM is only a little over 6 months away ? The event will take place at the Technology & Innovation Centre, and we have officially opened the call for special session and workshop ideas.

Special sessions (focussing on a specific topic or area of science) can take place on either Tue 5th or Wed 6th November. They would be in plenary in one of the large lecture theatres, may have the option of remote viewing and are generally 2 hours long. Special session organisers can have a call for abstracts or devise a programme of invited talks.

Workshops are to be held on Thurs 7th November, and can be anything from a half to a full day. These allow an opportunity for breakout sessions/small group working/discussion etc. We have access to 8 conference rooms and an Executive Suite for workshops. The rooms are of

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different sizes and can accommodate a variety of delegate numbers depending on the format of the room and the type of workshop you may wish to run. MASTS provide the room, catering, registration etc, but the actual programme and running of the workshop would be down to the workshop organiser. If you would be interested in hosting a special session or running a workshop as part of the event, please contact Emma Defew via email.

25th-28th November 2024: The 4th Mediterranean Geosciences Union Annual Meeting.

Barcelona, Spain

The 4th MedGU Annual Meeting will be held this year in-person and online. Visit our website (www.medgu.org) to learn more about the event. On this occasion, we are pleased to invite you to take part in the conference and share/discuss your latest research findings. Your participation in-person or virtually will support MedGU's mission of ensuring a sustainable future for humanity in the region and for the planet. The abstract submission deadline is the 30th June, download the call for papers.

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 31st May.

JOBS and OPPORTUNITIES

Research Faculty Position- Oceanography - at the Cape Eleuthera Institute in The Bahamas

This is a great opportunity for an Early Career Researcher (PhD preferred) to start an independent research program whilst joining an existing collaboration working with sea gliders in the western Atlantic. This is a teaching and research role with a teaching component 2-day per week commitment during spring and autumn semesters.

Apply here: **Research Faculty (Physical Oceanography)**

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Modelling Vacancy at Cefas - Coastal Ocean Modeller
Deadline: 31st May 2024

The Centre for Environment, Fisheries and Aquaculture Science (Cefas) is the UK's leading and most diverse centre for applied marine and freshwater science. We currently rank in the top 5% of over 2,500 international institutes publishing in the same fields. We advise government and private sector customers in the UK and abroad on the environmental impact of their policies, programmes and activities through our scientific evidence and impartial expert advice.

The successful applicant for this post will be involved in a range of modelling activities relevant to ocean and coastal processes, delivering quantitative applied marine science for a range of national and international customers. Examples include linking catchments to coastal water quality and pollution dispersal or considering coastal resilience to future wave climates and sea level rise. You will use modelling to help improve our understanding of the relative importance of human and climate impacts on marine ecosystems. To address these issues, you will work closely with a multi-disciplinary team, including oceanographers, biogeochemists, marine ecologists, and fisheries scientists, so strong communication and inter-personal skills are essential.

This role provides an exciting opportunity to learn and develop within a team of experienced hydrodynamic and biogeochemical modellers. We are seeking an enthusiastic and adaptable person, with a good knowledge of numerical modelling, including programming languages and large data analysis methods. You will also have a desire to expand your knowledge of modelling techniques and broader marine science applications.

Additional information, including how to apply, can be found here:
https://www.civilservicejobs.service.gov.uk/csr/jobs.cgi?jcode=1908552
Informal enquiries can be made to Jennifer Graham (jennifer.graham@cefas.gov.uk).

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There are jobs in the MASTS newsletter

New vacancies:

- Administrator – Maritime Research And Innovation UK (MarRI-UK) – 24/05/24
- Deputy Secretary, Hazardous Substances and Eutrophication – OSPAR Commission – 31/05/24
- Postdoctoral Scholarship (2 Years) Within Algal Physiology And Photophysics – Umea University – 02/06/24
- Operations Manager – Government Of South Georgia – 20/05/24
- Administrator / Receptionist – SAMS – 24/05/24

Still open vacancies:

- Chief Executive Officer – Marine Management Organisation – 20/05/24
- Part Time Plankton Analyst – Scottish Government – 26/05/24
- Lecturer In Marine Biology/Ecology – University of West Indies – 26/05/24
- Land Management Policy Adviser – JNCC – 27/05/24
- Science Committee Member – NERC – 06/06/24
- Lecturer, Senior Lecturer In Marine Science – University Of Edinburgh – 05/07/24

PhD Opportunities:

- The Society for Underwater Technology (SUT) offers Educational Support Fund scholarships for talented students in marine science, underwater technology, and subsea engineering, addressing the industry's need for qualified professionals. Undergraduate and postgraduate students worldwide can apply, with awards ranging from £2,000 to £4,000 annually. Applications for the 2024-2025 academic year are open until **June 30th 2024**. For more information and application details, check out the SUT Webpage. Don't miss this opportunity to advance your education and career in these critical fields.
- The Application Of Machine-Learning To Establish Baselines And Assess Change In Sensitive Marine Habitats – UHI – 16/05/24
- Managing The Environmental Impact Of Antifouling Biocides In Recreational Marinas Through Stakeholder Engagement – University Of Essex – 31/05/24
- Climate Change Impacts to Marine Ecosystems (CLIME) in UK Regional Seas – SUERC – 31/05/24

There are jobs on the IMBER web site

https://imber.info/category/news/

- Researcher: Advanced Institute for Marine Ecosystem Change (WPI-AIMEC), JAMSTEC, Japan. Apply by **June 7**

ISSN 0306-7335