

Challenger Wave



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

NEWS

Sonardyne to host Marine Measurement Forum #63 on 25th September 2019 at Farnborough Air Sciences Museum

The 63rd Marine Measurement Forum (MMF63) one day networking seminar is scheduled for Wednesday 25th Sept 2019 and will be hosted by Sonardyne at the Farnborough Air Sciences Trust Museum in Farnborough, Hants. The day will include several presentations on variable aspects of marine data acquisition along with opportunities for networking with fellow attendees and viewing the unique surroundings of the impressive Museum.

Detailed information on the day's proceedings, including a call for presentations and event registration, can be found at www.eventbrite.co.uk/e/mm63-hosted-by-sonardyne-tickets-61858940757. - **Roger Scrivens. MMF Steering Group**

100th anniversary of the Liverpool Tidal Institute

It occurred to me that some people will be interested in pdfs of the presentations from the 11th May meeting at the Merseyside Maritime Museum to celebrate the 100th anniversary of the Liverpool Tidal Institute. All the attendees and people in NOC have been informed, and the Challenger Society will be printing a meeting report. If of interest click on the link below and then on the links for the individual pdfs. There will also be videos of the talks added to this page at some point, conference.noc.ac.uk/ocean-tide-and-port-liverpool - **Phil Woodworth**

National Marine Equipment Pool: Capital Expenditure Proposal Form

Members of the NERC-funded marine science community, who are involved in research

expeditions which utilize National Marine Equipment Pool (NMEP) equipment, are invited to submit proposals, by completing a Capital Expenditure Proposal Form, [noc.ac.uk/files/documents/about/ispo/MFAB Equipment Proposal Form.pdf](http://noc.ac.uk/files/documents/about/ispo/MFAB_Equipment_Proposal_Form.pdf), for sensors, systems or platforms to enhance the NMEP. Closing date: **30 September 2019**. Further information can be found at :- [noc.ac.uk/files/documents/about/ispo/Marine Facilities Advisory Board.pdf](http://noc.ac.uk/files/documents/about/ispo/Marine_Facilities_Advisory_Board.pdf). Enquiries: Jackie Pearson, MFAB Secretariat, jfpea@noc.ac.uk or telephone 023 8059 6097

Robotic ocean explorer to take on 'dangerous' Arctic mission

An underwater robotic vehicle will go on an Arctic research mission deemed too dangerous for humans in a bid to help scientists understand the true extent of melting from Arctic glaciers. A team from the Scottish Association for Marine Science (SAMS) in Oban, led by oceanographer Prof Mark Inall, will deploy a small autonomous underwater vehicle (AUV) known as an ecoSUB to the foot of a melting glacier in Arctic Norway. The aim is to learn more about the effect of meltwater on a process called 'calving', which causes huge chunks of ice to break off the glacier edge.



Kronebreen glacier in Kongsfjorden, Svalbard

Less than a metre in length and just four kilograms in weight, the ecoSUB will enter one of the most hostile environments on the planet to take measurements such as temperature and salinity as far down as 100 metres below Kronebreen glacier on Svalbard. The work will give researchers a clearer picture of how warming ocean properties affect the calving process.

Prof Inall said: "Given the importance of Arctic glacial ice melt in terms of climate change and sea level rise, the interaction between melt water and sea water beneath glaciers is hugely understudied. We have satellite images and models that help to predict the extent of ice loss but it is extremely important to 'ground-truth' these predictions by investigating conditions in the field. It would simply be too dangerous to go into such a hostile and remote environment with a boat. Not only is there a risk of falling ice, but large-scale calving causes huge waves, so it is a dangerous environment. That is where the ecoSUB will come into its own, working at the front line of Arctic science."

EcoSUB's readings will help researchers better understand the process of sub-glacial discharge, a term given to melt water that flows down through the glacier and out into the ocean. This water is fresher than the surrounding sea water, so starts to rise in the water column, creating a plume that pulls in warmer Atlantic water. As it rises, it circulates and creates a sandpaper effect against the face of the glacier. This process undermines the wall of ice, causing huge chunks to collapse into the sea.

SAMS will also deploy a larger AUV further from the glacier to take more detailed measurements and a drone will take aerial images of the glacier to help build a 3D map, whilst capturing a bird's-eye view of calving events.

James Coogan, a University of the Highlands and Islands PhD student at SAMS, will be operating the ecoSUB. He said much of the current understanding of sub-glacial discharge was based on mathematic models. "We want to get direct measurements of these plumes," he added. "How much fresh water is coming out of the glacier? How much of an effect is this having on the fjord water? How much heat and salt is in the water flowing in? These are questions we can answer to an extent with models but we need to check these conclusions with real data from the

field. That hasn't been feasible, until now." The team travels to Svalbard on Wednesday, August 7th.



University of the Highlands and Islands PhD student James Coogan will be deploying the ecoSUB on its mission into a hostile Arctic environment.

VIEWS

Submit session proposals for the European Geophysical Union (EGU2020), 3rd - 8th May 2020, in Vienna, Austria

The opportunity to submit proposals for sessions for EGU 2020 is now open at meetingorganizer.copernicus.org/EGU2020/provisionalprogramme. The deadline for session proposals is 5 September 2019. If you enjoyed a particular session at EGU2019, please suggest it again and maybe volunteer to convene it? Remember there is no automatic roll-over of sessions any more. Please see the convenor guidelines at egu2020.eu/guidelines/convenor_guidelines_and_rules.html. Note that we are trying to increase the diversity of conveners in all senses. We encourage early career scientists to be conveners, but bear in mind that no conveners can have an oral slot in their own session. I'd like to see more PICO sessions suggested - these have grown in popularity in OS but there is scope for more. I myself did one this year and am now a convert! If I can do one, anyone can. I look forward to seeing lots of exciting sessions for 2020! – **Karen Heywood, EGU Ocean Sciences president**

INCISE 2020 "Canyons: human connections to the deep sea"

On behalf of the international and local organising

committee we would like to announce early details for this event hosted at University College Cork, Ireland between the 15th - 17th June 2020. The official INCISE 2020 website can be found at <https://www.incise2020.com/> where we will provide updates as the conference develops.

INCISE (International Network for Submarine Canyon Investigation and Scientific Exchange) is an annual forum bringing together scientists from around the world working on all aspects of submarine canyon research, and to stimulate discussions across disciplines. This cross-discipline approach allows scientists to collaborate and initiate a holistic approach to canyon research. The bi-annual conference brings together 80 - 100 geologists, biologists, engineers, oceanographers, ecologists and environmental managers. It provides a truly multidisciplinary and exciting forum for the exchange of knowledge and generation of ideas that underpin sustainable submarine canyon management.

At this early stage, we also welcome proposals and suggestions for pre-conference workshops to be hosted at INCISE 2020. For ideas, suggestions and proposals, please email: incise2020@gmail.com. We look forward to welcoming you to the City of Cork to experience our culture, engage in scientific discussion and discovery and enjoy the benefits that INCISE engagement offers. - **Prof Andy Wheeler and Dr Aaron Lim**

Lewis Pugh – 12th September

Colleagues at the Royal Scottish Geographical Society in Perth have organised a public event with Lewis Pugh (UN Patron of the Oceans and Ocean Advocate) in September. Tickets are £15 or only £5 for U21s and Students. Tickets via the web site: www.horsecross.co.uk/whats-on/lewis-pugh-83602

SALTS

A visit to the Porcupine Abyssal Plain Sustained Observatory (PAP-SO)

Last month I was lucky enough to be onboard the RRS *Discovery* for the annual cruise to the Porcupine Abyssal Plain Sustained Observatory (PAP-SO). The PAP-SO is in the North Atlantic

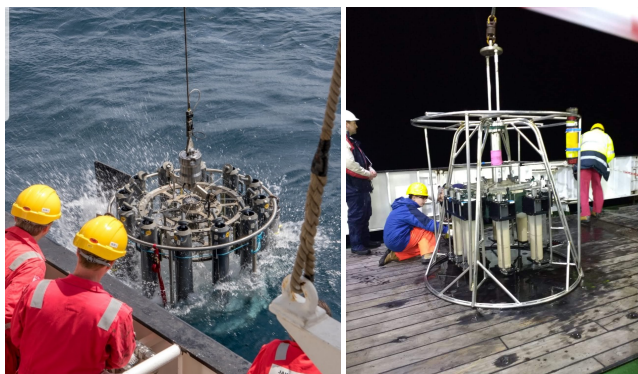
and has been active since 1985 making it one of the longest biogeochemical and ecosystem time series records in Europe. Time series are of vital importance when assessing long-term changes in the global oceans. They provide background levels from which anomalies and trends can be identified. The longer these time series run for and the more measurements that are taken, the easier it is to identify trends with certainty. It is of some concern that the number of time series throughout the oceans is decreasing which is why it is so great that the collection of data from PAP-SO continue to be funded (see <http://projects.noc.ac.uk/pap/> for more information about PAP-SO).

There was a fair amount of work to be done in the short time we had such as swapping the buoy and sensor frame, numerous CTD casts and collecting and deploying sediment traps. The water from the CTD casts was analysed for a multitude of components onboard such as oxygen, nutrients, carbon chlorophyll and salts. I was trained to analyse the nutrients and oxygen providing data to calibrate some of the incoming and outgoing sensors on the sensor frame which hangs 30 m below the PAP1 buoy.



The toll a year at sea has on the PAP1 buoy

However, that was just the activities going on in the daytime. The benthic team worked through the night carrying out megacores (collecting sediment from the seafloor 4850 m below) and HyBIS missions (taking videos of the seafloor) as well as venturing out in the daytime to deploy and sort through amphipod traps and demersal trawls.



Daytime CTDs and Night time megacores

A lot of data was analysed during the cruise, however, the cruise also allows the collection of materials which results in data production back on land throughout the year such as the particle flux collected by the sediment traps or the cataloguing of the benthic organisms from the demersal trawl.

As if that wasn't enough activity each cruise also brings an opportunity for a wide variety of scientists to come together. It isn't just scientists from NERC on the ship, we had collaborators from MBA (Plymouth), VLIZ (Belgium) and a POGO fellowship from Colombia. This collaboration meant that as well as the standard tasks going on we had side projects such as growing marine fungi and experimenting with microbial genomics. (More information about all of these in our blogs papobservatory.wordpress.com/).

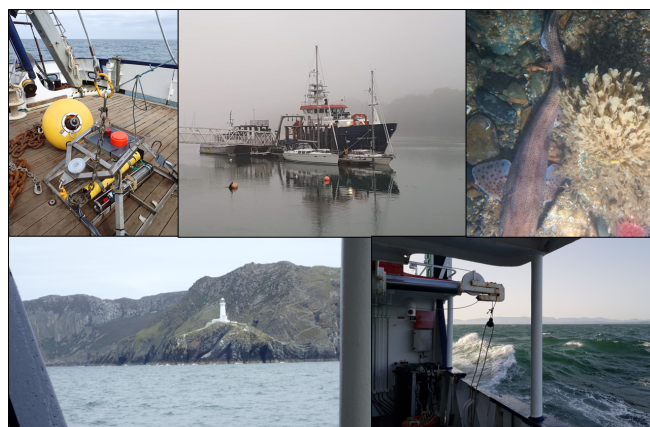


Boat life is very simple, your world becomes very small. Everything from the galley providing three delicious meals a day to the gym to the bar is all within 100 m and with only 50 people on board you quickly get to know everyone from scientists to engineers. It was an absolute joy to spend

almost 3 weeks with this group of people and my only current plan is to get on another cruise as soon as possible ! – **Emmy McGarry, MSc Oceanography, University of Southampton**

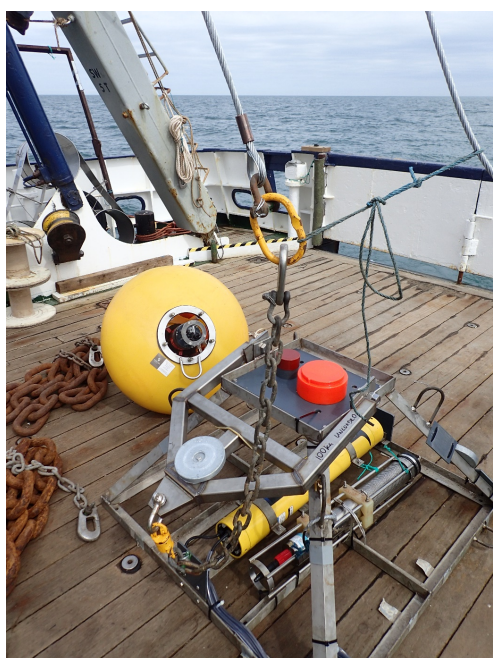
RV Prince Madog off Anglesey

During June and July myself and colleagues were aboard the RV Prince Madog operated by Bangor University and P&O maritime. The two cruises were for the SEACAMS2 project, www.seacams.ac.uk/seacams2/case_studies.php.en, which is now in its final year, and aims to support the marine renewable energy (MRE) sector in Wales.



We conducted 24 hour operations for up to 8 days in the July cruise, working 6 on, 6 off, shifts for the scientists and students (which is always a struggle to get into). Overall we were blessed by good conditions, which was very much needed for a mooring deployment of a WBAT autonomous echosounder in the Holyhead Deep to record fish school behaviour, and a 24 hour CTD station for SPM measurement calibration. The mooring deployment is for R&D work I'm doing with Minesto UK Ltd., minesto.com/our-technology, who are testing underwater kites off Anglesey (Their website is worth looking at if you're not familiar with tidal kites), with mooring recovery planned before the end of the year. We also undertook seabed camera sampling in high current areas, such as the Morlais MRE test site off South Stack, www.morlaisenergy.com/, which is never easy due to drag on umbilical cables and high turbidity, which gave us some fantastic detailed images of benthic fauna. Several species of starfish and *Urticina* sp. anemones are the most notable inhabitants seen on the seabed at these sites, the bright red anemones are a welcome splash of colour against the dominant shades of brown seen in the seabed images. Being at sea is the best part of my job, and these

last two cruises aboard the Prince Madog reinforced that.



The RV Prince Madog , www.bangor.ac.uk/ocean-sciences/about/facilities/madog/index.php.en, is a 35 m regional research vessel and is fantastic resource for the entire UK academic, research and commercial sector and is available for charter by these sectors. - **Tim Whitton, Bangor University**

CALENDAR

17th – 19th September 2019: IOCCP meeting, OceanObs '19

Honolulu, Hawaii, USA

For more details of the IOCCP OceanObs'19 meeting, please go to <http://www.oceanobs19.net/breakout-sessions/>.

25th September 2019: Sonardyne to host Marine Measurement Forum #63

Yateley, UK

The Steering Group for the Marine Measurement Forum (MMF) series of twice yearly, one day networking seminars is delighted to announce details for the forthcoming MMF63. The event will be hosted by Sonardyne at their Yateley, Hampshire HQ.

Detailed information on the day's proceedings, including a call for presentations and event

www.challenger-society.org

registration, can be found at www.eventbrite.co.uk/e/mmf-63-hosted-by-sonardyne-tickets-61858940757.

25th – 26th September 2019: Workshop on Sea operations for Ocean Observatories Toulon, France

EMSO ERIC proposes to bring together the major players in the field for a workshop focusing on means and methods for servicing fixed-point observing systems during their deployment, maintenance and recovery operations. Several sessions might interest the ocean observing community community, including one dedicated to intervention procedures with divers on shallow water equipment. Register by the 31st July. All details on the workshop web site wwwz.ifremer.fr/rd_technologiques/Actualites/WorkShops/Workshop-On-Sea-Operations-EMSO.

1st – 5th October 2019: Ecological Modelling Global Conference Salzburg, Austria



This global conference, to be held at the Salzburg Congress Centre, is the 22nd biennial conference of The International Society for Ecological Modelling (ISEM) and will bring together scientists from all professions and applications that deal with the use of ecological models and systems ecology. The Conference Chairs are:

Gudrun Wallentin, Department of Geoinformatics, University of Salzburg

Tarzan Legović, Ruđer Bošković Institute

Brian Fath, Department of Biological Sciences, Towson University

2nd - 4th October 2019: MASTS ninth Annual Science Meeting (ASM), Bold Science to Meet Global Challenges.

Glasgow, Scotland, UK

The 9th ASM, will take place at the Technology and Innovation Centre, and will examine the science we need to meet the modern challenges that face our marine waters and seas. This cross-disciplinary meeting brings together members of the marine science community, with the aim of promoting and communicating research

excellence and forging new scientific collaborations. The cross-disciplinary nature of the event as well as the high calibre of the selected talks means that scientists can broaden their knowledge in marine science as well as benefit from expertise and ideas gained in a range of fields other than their own.

Science presentations and e-Poster sessions will take place on the first two days (Wednesday 2nd and Thursday 3rd October), together with Plenary Speakers and opportunities to network. An e-Poster is an electronic version of the traditional poster boards, and is displayed on a TV monitor/screen. The e-Poster may include text, figures and images, as well as video and animation. E-Poster presentations are similar to regular presentations but should have a limited number of slides (3 at the maximum). All e-Posters will be presented by the author during specific e-Poster sessions. However, e-Posters can also be viewed any time during the Meeting. Simply use one of the computers located in the e-Poster area at a time convenient to you. You will be able to view all electronic posters as frequently, and as often as you wish by navigating through the menu.

Abstracts for talks and/or e-posters to the 2019 MASTS Annual Science Meeting should be submitted before **16:00 on Friday 16th August 2019** to masts@st-andrews.ac.uk using the abstract template document on the website. Abstracts can be submitted to one of the following areas:

- General Science Session
- Technologies & Methods in Marine Science
- Multiple stressors
- Marine Biogeochemistry
- The future of Scottish fisheries in a changing world
- Deep Sea

For more details about these sessions and to submit an abstract please visit – www.masts.ac.uk/annual-science-meeting/2019-abstract-submission/.

On the third day, the venue will host a number of meetings and workshops. Confirmed workshops so far include:

- A science-policy workshop (Wed 2nd Oct)
- Aquaculture careers workshop (Wed 2nd Oct)
- Decommissioning and Wreck Removal

(afternoon, Thurs 3rd Oct & morning, Fri 4th Oct)

- Arctic marine science: current research and opportunities for engagement in the Russian Arctic (9am-1pm) - theatre style (morning, Fri 4th Oct)
- NERC Innovation Programme for Oil and Gas (afternoon, Fri 4th Oct)
- An Introduction to Modelling in Scottish Water (full day training workshop, Fri 4th Oct)
- MEDIN Data Management Training for new Scientists and Surveyors (full day training workshop, Fri 4th Oct)
- Addressing the ecological implications of offshore renewable energy developments across receptor groups – shaping future marine energy research (all day, Fri 4th Oct)
- The Scoping and Ranking of Pressures in Scottish Marine Regions and Scottish Offshore Marine Regions

If you would like to exhibit at the event, or showcase a piece of equipment please contact masts@st-andrews.ac.uk for detail. We look forward to welcoming you at the MASTS ASM.

7th – 11th October 2019: 42nd CIESM Congress

Cascais, Portugal

Come and join our 42nd CIESM International Congress in the second week of October. A Congress conceived and designed to compare the approaches, findings and perspectives of Atlantic and Mediterranean researchers on a great number of common issues. So come to Cascais (Portugal) and meet hundreds of marine scientists from the Atlantic and Mediterranean shores. This will allow you, inter alia, to:

- actively participate in a number of debates (40 in total) covering all marine disciplines, and listen to four cross-disciplinary panels. See program sessions, ciesm.org/marine/congresses/sessions_cascais.php;
- engage discussions with all authors in three Plenary Poster sessions, and with friendly moderators, ciesm.org/marine/congresses/mosaic_cascais.php;
- enjoy the various, informal receptions and the free visit and guided tour of the world-famous Lisbon Aquarium mid-week.



Do not wait much longer: Cascais is a picturesque town, highly popular with tourists and so hotels and pensions in the vicinity will fill up quickly. Have a close look at the Congress web-page, www.ciesm.org/. - **Cordially, The CIESM Congress Team**

10th – 13th October 2019: Seventh Arctic Circle Assembly

Reykjavik, Iceland

Registration is now open for the 7th Assembly of the Arctic Circle, the largest annual international gathering on the Arctic. The Arctic Circle is an open, democratic forum where anyone can ask a world leader a question during Plenary Sessions, bring innovative ideas to interactive workshops, or organize Sessions in their own name: the platform is yours.



Following consultations with Arctic Circle partners and participants, it has been decided to open the Arctic Circle Assemblies ONE day earlier, on Thursdays. Plenary Sessions will end on Saturdays and the party for all participants will take place on the Saturday evening. On Sunday, thematic Excursions and Tours devoted to areas of interest to Arctic Circle participants will be offered. Arctic Circle Assembly participants are advised to arrive in Reykjavik on Wednesday, October 9th in order to participate in morning Sessions on October 10th. Participants who wish to attend October 9th Pre-Events should arrive on October 8th or earlier.

The Arctic Circle is attended by over 2000 participants from more than 60 countries: confirmed speakers represent governments, businesses, scientific institutions, indigenous associations, environmental organizations and other Arctic partners. Breakout Sessions will begin on Thursday morning and the Opening Session will be held after lunch on that day. In addition opportunities will be created for those who so desire to hold Breakout Sessions, working or networking meetings on Sunday morning. Pre-Events will consequently be on Wednesdays. The Arctic Circle Secretariat has received over 180 proposals for Breakout Sessions at the upcoming 2019 Arctic Circle Assembly; a record high.

Programs from previous Assemblies, which list all past Breakout Sessions, may be found at www.arcticcircle.org. The Arctic Circle provides an open, democratic forum for discussion and cooperation on Arctic Affairs.

12th – 14th November 2019: Marine Autonomy and Technology Showcase (MATS) 2019

Southampton, UK



The Delivery Committee for MATS 2019 are pleased to announce that Abstract Submission is

now open. During MATS 2019, our aim is to explore the information needs of users of Marine Autonomous Systems (MAS), review the current technologies available to enable the data gathering for MAS users and explore the methods of taking that data and making it exploitable information for the user need. Presentations must focus on work undertaken in the 12 months since MATS 2018 or be a forward look into the next 5 years.

13th – 15th November 2019: Oceanology International China

Shanghai, China

The deadline has been extended – don't miss your opportunity

The 2019 call for papers is now open at www.oichina.com.cn/en-gb. Oi China attracts 6,000 attendees from over 20 countries, this is your chance to position yourself as a leader in the industry and speak in front of professionals from across Asia's marine technology and ocean science community. This year we're accepting papers on:

- Unmanned Vehicles
- Ocean ICT
- Ocean Observation and Sensing
- Positioning and Navigation

Have something important to say ?, submit your paper for consideration. Papers may be presented in English as live Chinese translation will be provided. If you would like to submit your paper in Chinese please contact Penny Pei at penny.pei@reedexpo.com.cn alternatively submit in English to Dominic.coyne@reedexpo.co.uk by 16th August.

20th - 24th January 2020: 9th EUROLAG conference on coastal lagoons and transitional environments

Venice, Italy.

www.eurolag9.it/



EuroLag9
Future vision and knowledge needs for coastal transitional environments

The 9th EUROLAG conference on coastal lagoons and transitional environments will be held in the historic island of Venice (Italy) on 20-24 January 2020.
The conference is devoted to science, research and management issues that are related to lagoons and transitional areas.

Abstract submission is now open


[Submit Abstract](#)

End of abstract submission 15 September 2019

The conference is organized by the Institute of Marine Sciences (ISMAR) of the Italian National Research Council, the Consortium for Lagoon Research (Corila), and the University of Venice Ca' Foscari.

[Flyer](#)

IMBeR is a participating organisation in EuroLag9



imber@hi.no

16th February 2020: Ocean Obs Research Coordination Network (RCN) OceanObs'19 Conference follow-up meeting

San Diego, USA

The Ocean Obs RCN will host an OceanObs'19 Conference follow-up meeting immediately preceding the AGU/TOS Ocean Sciences Meeting (<https://www2.agu.org/ocean-sciences-meeting/>).

The OceanObs'19 Conference (Hawaii 16-21 September, 2019; <http://www.oceanobs19.net/>) will be the third conference of this series, held once every ten years. The Ocean Obs RCN annual meeting on 16 February 2020 will be dedicated to the synthesis of threads and recommendations emerging from the OceanObs'19 Conference. Of particular interest will be focusing the community on the planning for the implementation of initiatives emerging from OceanObs'19. The meeting will advance links between observation networks and operational users to facilitate the delivery of critical information to stakeholders, and to address critical policy issues that require multidisciplinary ocean observing systems.

Please circulate this 'Save the Date' reminder widely. We will follow up with an agenda after the OceanObs'19 Conference. Best wishes, on behalf of the organizing committee (Frank Muller-Karger, Jay Pearlman, Linwood Pendleton and Dawn Wright)

The OceanObs RCN is an NSF-sponsored forum on all aspects of ocean observing. Discussions identify advances and challenges in ocean observing and may identify new technologies and promote their cost-effective development, identify policy priorities, and highlight capacity building requirements for the next decade. This includes

discussion of Decade of Ocean Science for Sustainable Development (2021-2030) being organized by the IOC (<https://en.unesco.org/ocean-decade>), and balancing ocean observations, science, use, and conservation requirements.

Jay Pearlman, Ph.D. Fellow IEEE, IEEE France, Director, Four Bridges jay.pearlman@ieee.org.
"Submit your Best Practices in Ocean Observing for peer-review: <https://www.frontiersin.org/research-topics/7173/best-practices-in-ocean-observing>

16th – 21st February 2020: AGU Ocean Sciences meeting

San Diego, USA

Abstract deadline 11th September, agu.confex.com/agu/osm20/prelim.cgi/Home/0.

Announcing session PS011 – “Vertical Transport: Pathways from the Surface to the Interior”.

The vertical transport of properties, including carbon, oxygen, and heat, is crucial for the production and export of organic carbon, ventilating the subsurface ocean, and modulating ocean-atmosphere exchange. However, vertical transport is poorly constrained observationally, and a challenge for models because vertical velocity is highly sensitive to small-scale processes and model resolution. We will discuss both physical and biological mechanisms for vertical transport on scales ranging from the mesoscale to smaller scales, and including processes affected by surface forcing, seasonality of the mixed-layer, restratification, advection, subduction, mixing, sinking and topography. We will address the underlying dynamics and kinematics for vertical transport of water and properties using multi-platform observations, modeling and theory, while exploring three-dimensional Lagrangian pathways and their spatial and temporal scales of coherence. The effects of such transport on the biological production and export of organic matter is of interest, as also, the large-scale and long-term implications for exchange between the upper ocean and interior. **Primary Chair**, Dhruv Balwada, Courant Institute of Mathematical Sciences. **Co-chairs**, Amala Mahadevan, Woods Hole Oceanographic Institution, Julius Johannes Marian Busecke, LDEO/Columbia University, Daniel L Rudnick, Scripps Institution of Oceanography. **Primary Liaison**, Daniel L

Rudnick, Scripps Institution of Oceanography.

17th – 19th March 2020: Oceanology International

London, UK

By applying to be a speaker at Oi 2020, you have the opportunity to reach the world's largest marine science and ocean technology audience. This is your opportunity to connect with new technical and strategic audiences from academia, government and over 15 other industries, all unified by their use of ocean technology.

Oi oceanology
international
2020
17-19 MARCH 2020, LONDON, ENGL



Your submission can include:

- Offshore energy development
- Asset integrity and monitoring
- Hydrography, geophysics and geotechnics
- Coastal zone and shallow water
- Navigation and positioning
- Imaging and metrology
- Ocean observation and sensing
- Marine pollution and environmental stressors
- Automation and AI
- Unmanned vehicles and vessels
- Ocean ICT

Submit your abstract by 3rd September and, if successful, you can demonstrate your knowledge and strengthen your networks in London and across the world.

3rd - 8th May 2020: European Geophysical Union (EGU2020)

Vienna, Austria

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Cork, Ireland

On behalf of the international and local organising committee we would like to announce early details for this event hosted at University College. The official INCISE 2020 website can be found at <https://www.incise2020.com/> where we will provide updates as the conference develops.

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At this early stage, we also welcome proposals and suggestions for pre-conference workshops to be hosted at INCISE 2020. For ideas, suggestions and proposals, please email: incise2020@gmail.com. We look forward to welcoming you to the City of Cork to experience our culture, engage in scientific discussion and discovery and enjoy the benefits that INCISE engagement offers. - **Prof Andy Wheeler and Dr Aaron Lim**

21st - 25th June 2020: 6th International EcoSummit Congress, EcoSummit 2020 -

www.challenger-society.org

Building a sustainable and desirable future: Adapting to a changing land and sea-scape, Gold Coast, Australia

This conference series was founded in 1996 in Copenhagen, as a forum for scientists, practitioners, and policy-makers working across disciplines to solve the integrated environmental, social, and economic problems facing the world today. Since 1996, EcoSummits have occurred around the world (Canada, China, USA and Europe), with EcoSummit 2016 hosting 1400 participants from 87 countries in Montpellier, France.

EcoSummit 2020 will have a focus on coastal and marine ecosystems including adjacent terrestrial ecosystems and all habitats that are integrated within those ecosystems, including river networks, wetlands and catchments. We expect all aspects of environmental modelling, engineering, science, and policy to be covered under the focus of climate adaptation and the need for developing socio- economic and environmental resilience and sustainable prosperity around the world. Further focus will be placed on fragile systems that are more likely to suffer the consequences of climate change and anthropogenic pressure such as islands, coastal communities and arid landscapes.

In the current context of an increasing world population, in particular in coastal regions, it is evident that building sustainable cities and using resources sustainably is inevitable. It is envisaged that the Summit will produce a declaration encompassing its vision and policy recommendations. We welcome your participation and look forward to seeing you at EcoSummit 2020

EcoSummit 2020 Co-Chairs:

Robert Costanza, Crawford School of Public Policy at Australian National University, Australia.
Bai-Lian (Larry) Li, University of California, Riverside, USA.

Jan-Olaf Meynecke, Griffith University, Australia

Visit the EcoSummit 2020 website: ecosummitcongress.com

7th - 11th September 2020: Challenger Society Biennial Meeting

Oban, Scotland

Just a 'date for the diary', stayed tuned, more very soon.

The CSMS email address is info@challenger-society.org.uk. Contributions for next month's edition of Challenger Wave should be sent to: john@vectisenvironmental.com by the 30th August.

We continue to send printed copies of Challenger Wave to members of the CSMS without email addresses. However it is in everybody's interest to send your email address to Jennifer Jones, jxj@noc.ac.uk, as soon as possible

JOBS

The **Department of Hydraulic Engineering and Water Resources Management** of the Institute for Modelling Hydraulic and Environmental Systems (IWS) at the University of Stuttgart is looking for a competent, creative, flexible and a team-oriented candidate as:

Head of Research Group (Postdoctoral Researcher)

Your tasks will comprise acquiring, processing and carrying out research and development projects in the field of numerical modelling. This will include hydraulic modelling and sediment transport modelling of medium- and long-term processes (large scale, 1d and 2d) as well as investigations of small-scale morphological phenomenon (3d). Your responsibilities will include the supervision of scientific staff (PhD candidates) within research projects as well as the lead of the research group 'Hydromorphology'. The position requires your involvement in both research and teaching; the study courses are held in English (Water Resources Engineering and Management, and Master of Infrastructure Planning) and German (Civil and Environmental Engineering). It will be also possible to write a habilitation thesis.

We are looking for a candidate who holds a doctoral degree in Civil or Environmental Engineering (or related discipline), is experienced in numerical modelling and has high level of skills in English (spoken and written). German language skills would also be desirable. Experience in project management and a profound expertise in scientific work would be of advantage and should be proven by publications and reference projects.

Initially the position is temporary for one year and shall then be extended up to five more years. We offer interesting and challenging projects, independent work, practice-oriented research and personal development in national and international exchange. Please send your application electronically to abt1-bewerbung@iws.uni-stuttgart.de:



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Universität
Stuttgart

The University of Stuttgart wishes to increase the number of females in science and therefore encourages women to apply. Handicapped applicants will be given preference in the case of equal qualifications. The Central Administration of the University of Stuttgart is responsible for recruitment.

Please note that by submitting your application you consent to the storage and use of your personal data for a specific purpose.

Researcher in Physical Oceanography

Ref: RA1665

£33,199 to £39,609 per annum

Applications are invited for the post of Researcher in Physical Oceanography to undertake research on physical oceanographic processes on the continental shelf and slope of Antarctica. You will work with Professor Karen Heywood on the European Research Council funded COMPASS project.

Processes on the Antarctic continental shelf and slope are crucially important for determining the rate of future sea level rise, setting the properties and volume of dense bottom water exported globally, and regulating the carbon cycle. Yet our ability to model and predict these processes over future decades remains rudimentary. This deficiency in understanding originates in a lack of observations in this inaccessible region. COMPASS seeks to rectify that by exploiting new technology - autonomous marine vehicles - to observe, quantify and elucidate processes on the continental shelf and slope of Antarctica that are important for climate.

You will participate in the design and delivery of field campaigns in the Antarctic using gliders and our new autonomous surface vehicle. You will analyse the resulting observations and compare these with current understanding and/or numerical model output. You will lead publication of the results in international peer reviewed journals.

The research will be based within the Centre for Ocean and Atmospheric Sciences (COAS) at UEA.

You should have a PhD in physical oceanography (or equivalent experience) and a publication record showing evidence of international quality. You should have excellent oral and written communication skills, with experience of presenting results at conferences.

We anticipate that you will participate in observational oceanographic campaigns in the Antarctic.

The full time post is available to start between 1 October 2019 and 30 March 2020 for a fixed term of up to 35 months depending on the salary spine point but the fixed term must end on 31 August 2022.

Closing Date: 23 August 2019

Applications should be made only through the website

at <https://myview.uea.ac.uk/webrecruitment/pages/vacancy.jsf?latest=01006888>.

Senior Research Associate in Physical Oceanography
Ref: RA1644

£33,199 to £39,609 per annum

Applications are invited for the post of Senior Research Associate in Physical Oceanography to undertake research in ocean processes in the Amundsen Sea, Antarctica. You will work with Professor Karen Heywood and Dr Rob Hall on the NSF-NERC-funded TARSAN project.

You will contribute to an observational field campaign in the region of the Thwaites glacier in the Amundsen Sea, Antarctica, using autonomous underwater vehicles (gliders and propeller-driven), autonomous surface vehicles, moorings, and ship-based hydrographic and turbulent microstructure surveys. You will process, analyse and publish the observations, in collaboration with other TARSAN scientists in the UK, US, Sweden and Korea, spanning expertise in glaciology, atmospheric and marine science.

The research will be based within the Centre for Ocean and Atmospheric Sciences (COAS) at University of East Anglia.

Essential requirements for the post include a PhD in physical oceanography (or equivalent experience) and a publication record showing evidence of international quality and you must be able to meet all the essential criteria in the person specification. You should have excellent oral and written communication skills, with experience of presenting results at conferences.

We anticipate that you will participate in the TARSAN observational oceanographic campaign in the Amundsen Sea, and that you will visit international TARSAN partners.


The full time post is available from a start date to be agreed, i.e. between 1 January 2020 to 30 June 2020 and is for a fixed term of period of up to 3 years.

Closing date: 19 August 2019.

Please see details at <https://myview.uea.ac.uk/webrecruitment/pages/vacancy.jsf?vacancyRef=RA1644>. Applications must be made online through the website, not by email.

There are jobs on the IMBeR web site

<http://www.imber.info>



Integrated Marine Biosphere Research

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- Postdoc: Economics of conservation planning for salmon recovery in the US Pacific Northwest.UW, Seattle, USA. Apply now
- 10 UNESCO/Japan Research Fellowships for postgraduates from developing countries : Apply by 29 Nov
- Frontiers for Young Minds - science journal for children - become an author or an editor

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