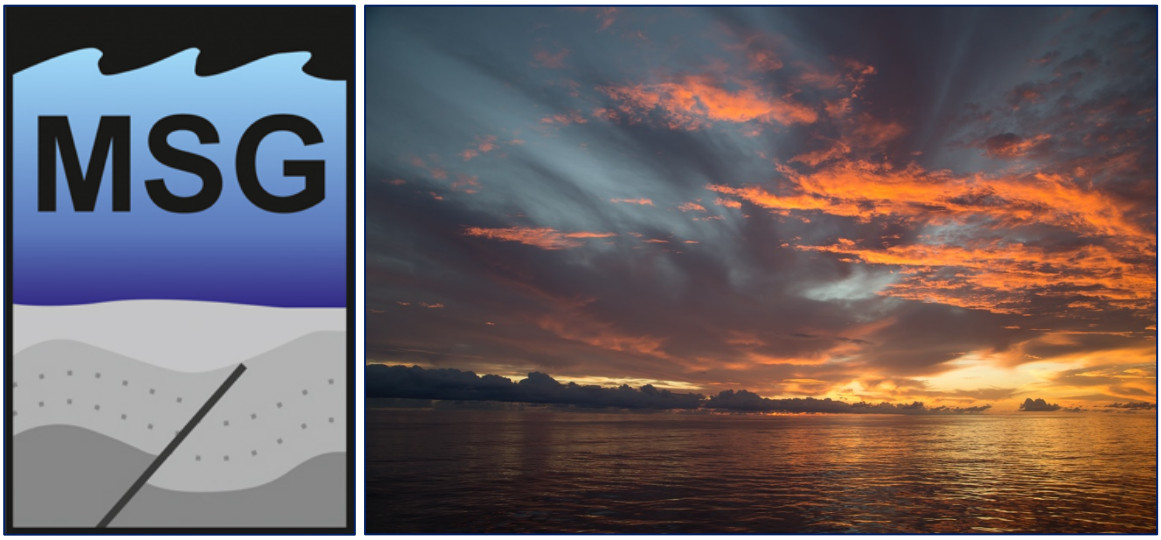
Marine Studies Group Newsletter – January 2021

How do Marine Geoscientists survive in a Lockdown?



We hope that everyone in the Marine Geoscience community is well and has been safe during a tumultuous past 12 months. With much travel curtailed and many expeditions unable to proceed, it has been a trying year for those in Marine Geoscience.

However, we have remained busy. In this edition of the MSG Newsletter…

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Page 9-12 Meet your committee members, where we have many new faces!

We're looking forward to re-invigorating our communication and activity, but in the meantime, please check out geolsoc.org.uk/marine for more information on the Marine Studies Group of the Geological Society.

Free Marine Geoscience Live Youth Webinar

The Marine Studies Group is hosting a new Live Youth Webinar! We need your help to get the word out…

Date 24th February
Time 5pm – 6pm
Registration forms.gle/Dsz4CDFzQeTYP7uR7
Location Simultaneous Zoom & YouTube Live Stream broadcast

us02web.zoom.us/j/89737684804

youtu.be/3Fmh0g7qfZ0

You can register above for free to get automated reminders in the lead up to the webinar.

If you can help us advertise and market the webinar through any contacts you have, please do get in touch at *marinestudiesgroup@gmail.com*

How you can help solve the climate and environmental crisis as a Marine Geoscientist

Do you want to use some of the most advanced technology in the world to explore the world at the bottom of the oceans? Understanding this little-known part of our planet is critical for determining how Earth formed, and how it lives and breathes.

Marine Geoscience involves the study of and exploration of the rocks and sediments at the bottom of the ocean. The field of Marine Geoscience draws a wide range of people with backgrounds ranging from Physics, Chemistry to Earth Sciences, Geography, and Biology.

By combining an understanding of seabed processes with today's cutting-edge technology, Marine Geoscientists work at the leading edge of research, in resource management, carbon capture and storage, the study of past climate, and marine infrastructure. Their work is absolutely critical to the understanding and mitigation of future climate change to ensure a safe environment for your generation.

Think you want to get involved? Join this webinar to learn about career opportunities in this exciting and rapidly evolving field and find out how you can contribute to the sustainable future of our planet as a Marine Geoscientist.

Webinar Panellists

I am a Marine Geologist and it's all about making noise
Katrien van Landeghem (Bangor University)

Sound waves are at the heart of my science and my teaching: we use sound waves to investigate glaciers from the past and glaciers of the present. We use sound waves to see how the seabed reacts when we mitigate against the consequences of the current climate crisis. It's important to make some noise about these themes!

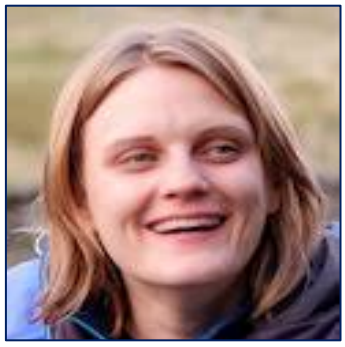
Marine Geohazards - how to avoid being in the wrong place at the wrong time
David Rushton (East Point Geo)

Developments in the marine environment, like transatlantic telecommunications cables and giant wind turbines, are very expensive to design and install and even more expensive to fix when they break. Natural disasters, or 'geohazards', such as earthquakes and submarine landslides, pose a significant threat to marine developments. I aim to predict the likelihood and magnitude of these geohazard and provide ways to reduce the damaging impact on planned developments.

Using robots to get ocean information
Michael King (Ocean Infinity)

Before any offshore project, detailed information about the area has to be gathered. This information is predominantly acquired using remote sensing, acoustic survey, and seismic techniques to build a detailed picture of the seabed and sub-seabed. Thanks to advancing technologies, these surveys are more frequently being carried out by uncrewed robotic systems. Control of these robots, as well as detailed technical appraisal of the datasets provided, is critical to helping us secure the long-term energy and communication future of our planet in the most sustainable way possible.

Sub-marine landscapes as the foundation for a net-zero future
Natasha Barlow (University of Leeds)



My interest is in understanding past environments and how they have responded to climate change, in particular those landscapes that are now buried under the sea. Many of these locations, for example the North Sea, are being developed for offshore wind farms with the turbine foundations located within the sub-marine landscapes. By understanding the sediments in the North Sea, from glacial to fluvial to coastal and marine, using geoscience skills, we are able to better support wind farm development and meeting net-zero goals.

Upcoming meetings sponsored by the MSG

SAVE THE DATE: January 2022 - The next **Shackleton Meeting**

We hope to meet in person in London in January 2022 to hold the next Shackleton, focussing on the role of Marine Geoscience in moving towards a more sustainable world, to help us kick off the Geological Society of London's *Year of Sustainability*. This meeting is postponed from its usual date (September 2021) so as not to conflict with the planned Challenger meeting, which was postponed by a year due to the pandemic.

More info coming soon!

The MSG is co-sponsoring a meeting on **Plastics in the Environment**

The Geological Society will be hosting a virtual one-day meeting entitled 'Plastics in the Environment' on 15th March 2021. This event will bring together researchers from a diverse range of disciplines (including hydrology, sedimentology, geochemistry, earth science and biology) to discuss the fate of plastics in terrestrial, freshwater and marine environments. Abstract submissions should be sent in a word document format to conference@geolsoc.org.uk by Thursday 28th January.

Please specify whether you wish to present an oral or poster presentation. The meeting welcomes submissions related to the: 1) source, 2) transfer, 3) degradation, 4) persistence and 5) measurement of plastics in the environment.

More details can be found here: geolsoc.org.uk/05-plastics-in-the-environment-2020

The **Deep Water Circulation Research Conference** will be held in Edinburgh between 8-10th September 2021.

The MSG is co-sponsoring this fourth edition of the event - a series of specialised deepwater research conferences. It is the primary meeting for all those interested in this fast-moving and interdisciplinary field – sedimentologists, physical oceanographers, paleoceanographers, economic geologists and the broad contourite community. The main aim is to discuss, exchange and advance our understanding of deepwater circulation and its effects on the seafloor and sediments. Hope to see you all there!

More details can be found here: 4dwc.hw.ac.uk/

Check out **Exploring Earth by Scientific Ocean Drilling**, part of the 2050 Science Framework.

This new report guides multidisciplinary subseafloor research into the interconnected processes that characterize the complex Earth system and shape our planet's future. The *2050 Science Framework* has a 25-year outlook, inspiring state-of-the-art approaches for scientific ocean drilling far into the mid-21st century. The framework is supported by enduring principles that discuss access to data, the proposal process, planning and safety, diversity and inclusion, and international collaboration.

More details can be found here: iodp.org/2050-science-framework

Keep an eye out for announcements of a new meeting - Royal Society of Edinburgh on 11-12th November 2021, on the topic of 'Blue Carbon: Beyond the Inventory'.

More information in our next Newsletter, or check out the link: bluecarbon.scot/

NOC updates

The 2021 AGM of the NOC Association of Marine Science National Capability Beneficiaries (NOCA) will be conducted by Zoom on 11th and 12th May 2021 and this year's meeting will cover a wide range of topics including the NERC fleet, the Net Zero Oceanographic Capability Scoping Project (NZOC), development work in AUVs, the COVID-19 legacy, Equality, Diversity and Inclusion, the UN Decade of Ocean Science for Sustainable Development, the UN Climate Change Conference COP26, the UK G7 Presidency, global oceanography programmes, international engagement, the next generation of marine scientists and the funding landscape for marine science.

You are warmly invited to participate in this free on-line event. For further details and to register: https://noc-events.co.uk/noc-association-meeting-2021, or contact Jackie Pearson, Secretary to the NOCA, jfpea@noc.ac.uk

On behalf of Chair, Professor David Thomas and the NOCA Steering Board, we look forward to your joining the meeting. Please kindly circulate to colleagues who may also be interested to join.

Policy drivers and enablers for a UK Net Zero Oceanographic Capability

Given the serious and far-reaching effects of climate change on the ocean, it is important that those involved on ocean science and policy minimise the climate impacts generated by oceanographic research. To address this challenge, NERC has commissioned a scoping study to inform planning for a future low carbon oceanographic research capability. The Net Zero Oceanographic Capability (NZOC) project brings together a team of national experts under the leadership of the National Oceanography Centre's National Marine Facilities Division to investigate the drivers and enablers of future oceanographic research and identify options for achieving a net-zero oceanographic capability by 2040.

The project team recognises that the evidence needed to underpin existing and future ocean policy will contribute to the research agenda of any future oceanographic capability and the regulatory frameworks surrounding ocean research will influence where future oceanographic capabilities can operate and the types of operations that they will be able to undertake as well as the type of vehicle(s) or vessel(s) that will make up the future 'capability' and how it might be powered. To discuss these issues further we are holding an online workshop to capture stakeholder opinion on:

- How the UK's current and future ocean policy and international commitments could influence the net-zero oceanographic capability; and
- How current and future the legal and regulatory frameworks could influence the net-zero oceanographic capability.

We therefore invite you to join Professor Steve Fletcher (Professor of Ocean Policy and Economy at the University of Portsmouth), Kara Chadwick (Royal Navy Legal Adviser) and Roland Rogers (Emeritus Fellow NOC) for what promises to be a fascinating discussion.

Workshop (online) date: 18th February 2021
Registration link: https://noc-events.co.uk/net-zero-oceanographic-capability-w2

A report from the UK IODP Annual Meeting 2020

ukiodp.org/

The UK IODP Annual Meeting 2020 was held online between the 27th and 28th August, when we welcomed ~220 registered participants to the virtual meeting, held on Zoom. The meeting was convened by Dr Rebecca Bell, Dr Kirsty Edgar, Prof. Richard Herrington, Prof. Lisa McNeill, Mr David McInroy and Dr Jude Coggon.

The convenors were pleased to receive a great selection of abstracts from UK scientists, which enabled them to produce an exciting and diverse programme of talks and posters, spread over three sessions. Keynote speakers Dr Ake Fagereng (Cardiff University), Dr Roz Coggon (University of Southampton) and Prof. Tina van de Flierdt (Imperial College) delivered fantastic presentations and the programme was completed with 12 further talks (including five from students and two from Early Career Researchers (ECRs)) and 20 stimulating posters (eight of which were presented by students and eight from ECRs). We were presented with research from all five of the world's oceans, on samples from equator to polar regions, mantle to pelagic sediments, and from ridge to trench. Topics covered varied from tectonics and rifting to paleoclimate, mud volcanoes to meteorite impact craters, and origin of life to biome shifts in response to climate change.

Organising useful poster sessions that could be run in a digital format was a new challenge! Posters were shared online in advance and each presenter was given two minutes in the main session to advertise their key message. We then split posters into two separate Zoom "rooms" that participants could move between at will, to facilitate questions and discussion within the time constraints of the meeting.

In addition to the research presented, we learned more about the "Downhole Logging for IODP Science" ECORD Summer School, hosted annually at Leicester University, and the New IODP 2050 Science Framework. In the Friday afternoon session Steve Bohaty and Dave McInroy provided updates from the

JR Facilities Board and the ECORD Science Operator, respectively, generating a lively Q&A session. We finished the meeting with a social session, dividing participants into randomly assigned “breakout groups” of six to seven people, giving an opportunity for networking and to meet new people.

The meeting was generously sponsored by the Marine Studies Group and the Geochemistry Group and representatives of each awarded prizes for the top student presentations. If you have any feedback or suggestions regarding the meeting, then please do send your comments by email to jude.coggon@southampton.ac.uk.

Student Prize Winners

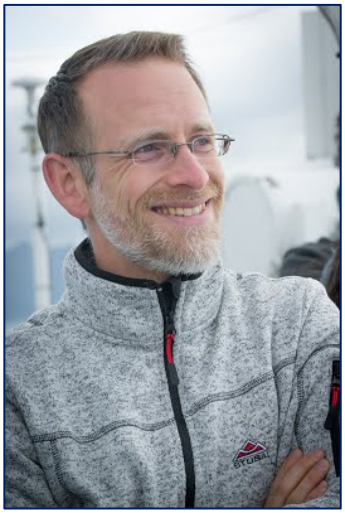
Best talk: Louis Claxton (University of Oxford)

Best poster: Mohd Al Farid Bin Abraham (University of Bristol)

Poster runners up: Rebecca Hopkins (University of Southampton) & Nicola Kirby (University of Birmingham)

Honourable mention to Laura Frahm for her talk

There has been lots of change on the MSG committee – see below for information on the committee members!



A geologist by training, **Dr Christian März** is currently Associate Professor in Biogeochemistry at the University of Leeds. His research evolves around the biogeochemical properties and reactions of marine sediments, with a focus on biologically relevant elements like carbon, sulphur, phosphorus, and transition metals, particularly in anoxic as well as high latitude systems. In an attempt to understand how past environmental conditions are archived in ancient sedimentary rocks, he also investigates biogeochemical processes in modern marine mud. Despite his sea-sickness, he enjoys participating in research cruises to recover samples from the sediment-water interface down to several hundred meters sediment depth.

sites.google.com/site/thediljemer/
environment.leeds.ac.uk/see/staff/1393/dr-christian-maerz

Dr Iris Verhagen is a Lecturer in Quantitative Sedimentology in the Department of Earth, Ocean and Ecological Sciences at the University of Liverpool. Her current role is predominantly teaching focussed, but she also likes to pursue her research interests in physical sedimentology and in diagenesis as part of the Chlorite Consortium at Liverpool. This involves lab work, using flume tanks, as well as fieldwork studying fundamental sedimentary and diagenetic processes in modern and ancient environments. Prior to joining the University of Liverpool, Iris worked as a sedimentologist in the oil and gas industry assessing reservoir characteristics of sedimentary basins.

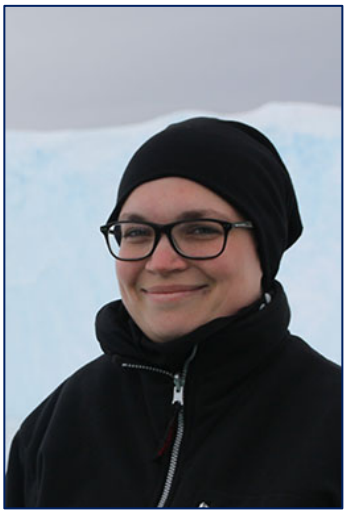
liverpool.ac.uk/environmental-sciences/staff/iris-verhagen/
linkedin.com/in/iverhagen/

With a technical background as a geophysicist, **Michael King** started his career working offshore across the world, followed by a move into project management, where he gained extensive experience across a range of oil and gas projects, within the offshore renewables sector and for the subsea cables market in the UK and Europe. More recently, he has been focussed on strategy and innovation, responsible for providing commercial support and insight at Ocean Infinity, with particular concentration on marine robotic systems and the way they can be used to further our understanding of the world's oceans and what lies beneath them.

oceaninfinity.com
linkedin.com/in/michael-king-67030634/

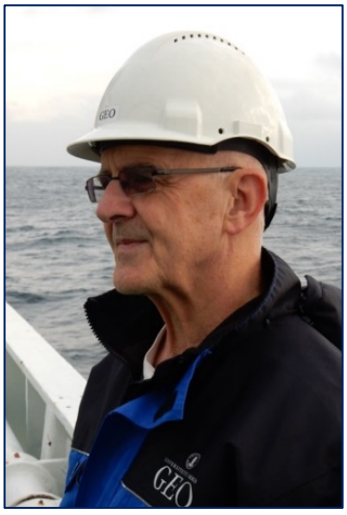
Dr Jude Coggon is a geologist with a research background in geochemistry of ultramafic rocks and minerals, including ancient seafloor. She is Knowledge Exchange Coordinator for UK IODP (International Ocean Discovery Program), based at the University of Southampton, and as such she supports the UK community in all aspects of the programme, from logistics to outreach. Jude was previously the Science Project Manager for the Oman Drilling Project, an international scientific collaboration investigating the evolution of ancient ocean floor from its formation at a mid-ocean ridge, through hydrothermal exchange with the ocean, tectonic uplift, emplacement and erosion to present day bio-geo-chemical alteration.

southampton.ac.uk/oes/about/staff/jac3g15.page
ukiodp.org/



Dr Katharina Hochmuth is a Research Associate with the University of Leicester. As a Petrophysics Staff Scientist she is responsible for the physical properties and downhole-logging program during Mission Specific Platform projects within the International Ocean Discovery Program (IODP). She enjoys working with scientists of the vast varieties of geoscience disciplines within IODP, supporting them in achieving their research goals. As a marine geophysicist, her research focuses on past ice sheet evolution and glacier-derived and influenced sedimentation from the continental shelves to the deep sea. She sailed on various research cruises spanning the tropical regions of the central Pacific to the Screaming Sixties of the Southern Ocean.

le.ac.uk/departments/geology/people/hochmuth-k/kh355
le.ac.uk/departments/geology/research/gbrg/projects/iodp

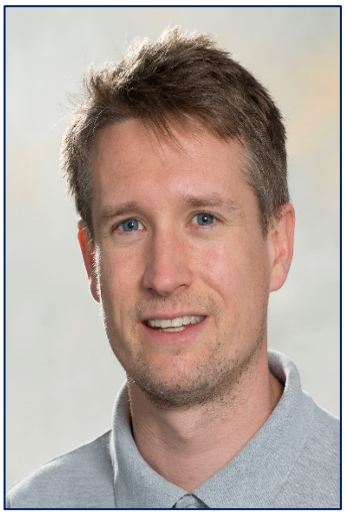


Dr Paul Butler is a marine geologist and climatologist based at the Penryn, Cornwall campus of University of Exeter. His main research speciality is sclerochronology, the use of the hard parts of living organisms as a proxy for the marine environment. He works with the shells of long-lived bivalve molluscs, in particular *Arctica islandica*, a clam with a claim to fame as the longest-lived animal known to science whose age we can accurately measure. Dr Butler is currently a researcher and scientific coordinator with SEACHANGE, an ERC-funded synergy project investigating the links between major cultural changes in maritime societies and marine ecosystems.

geography.exeter.ac.uk/staff/index.php?web_id=Paul_Butler

After graduating with an Earth Sciences degree, **David Rushton's** career started at Fugro working as a marine geotechnical engineer, characterising seabed sediments to inform the design of foundations for offshore structures. Through his knowledge of geographic information systems, David developed methods to undertake engineering calculations such as slope instability analyses rapidly across large development areas using spatial analysis and applied this approach to geohazard risk assessments for deep marine infrastructure developments. David is now the geotechnical director of East Point Geo, an independent geoconsultancy for onshore and offshore projects.

eastpointgeo.com
linkedin.com/in/david-rushton-18482b111/



Gareth Carter is a Senior Marine Geoscientist at the British Geological Survey with a background in geological hazards and engineering geology. In a commercial capacity, his work includes undertaking marine geohazard assessments in relation to offshore infrastructure developments for both the oil & gas and renewable energy sectors, and seabed surface and subsurface mapping for foundation design of offshore structures. His research focuses on mapping seabed morphology in respect to seafloor processes (e.g. subaqueous mass flows and mobile bedforms), typically with an applied aspect. Gareth also contributes to the International Ocean Discovery Program (IODP) in his role as an Expedition Project Manager (EPM) for the European Consortium for Ocean Research Drilling (ECORD) Science Operator (ESO).

bgs.ac.uk/people/carter-gareth/
linkedin.com/in/gareth-carter-05ab3542/

Gareth Wood is the Global Geohazards Discipline Lead for BP. Educated as a Geologist at Leicester University, he started to specialise in Marine Site Investigation and Geohazards after joining Fugro Survey Ltd in 1995 as a Site Investigation Geophysicist. Through this he gained worldwide experience in offshore geophysical and geotechnical acquisition across energy and communication markets, as well as working on complex Marine Geohazards assessment. He joined BP in 2007 and has been accountable for delivery and strategy for Geohazards Projects supporting Exploration, Appraisal and Engineering projects in the O&G sector. More recently he has been focussing on BP's reinvention with the UK's first CCUS Project and guidance on Site Investigation for potential Renewable projects.

bp.com/
linkedin.com/in/gareth-wood-b3a5054/

Dr. Alexandra Turchyn (Sasha) is a Reader in Biogeosciences in the Department of Earth Sciences at the University of Cambridge. Her research is in the use of light stable isotope geochemistry in marine sediments to understand the sedimentary carbon cycle. She moved to the UK from the US in 2009, after her postdoc at UC Berkeley, to start her lectureship at the University of Cambridge. Her research explores the transformations of carbon in marine sediments and marine oceanic crust and how this influences both the carbon cycle over geological time as well as the budgets of many other elements. Sasha has been the chair of the Marine Studies Group since 2015.

William (Bill) Austin is the former chair of the Marine Studies Group and a Professor in the School of Geography and Sustainable Development at the University of St Andrews. He graduated in Geology from University College London in 1986 and holds a Masters in Micropalaeontology and Doctorate in Ocean Sciences, completed with joint supervision from the British Geological Survey. He has held research fellowships from the Royal Society of London, the Royal Society of Edinburgh and the UK Natural Environment Research Council. After a Lectureship at the University of Durham, Bill moved to St Andrews in 1999 as Reader; he was appointed Professor in 2015. He also holds a visiting chair appointment at the Scottish Association for Marine Sciences, where he is Professor of Marine Geology. Bill is currently a collaborative worker with Scottish Government, advising on matters of blue carbon science and policy.

Blue Carbon | Scottish Blue Carbon Forum | Scotland