

Challenger Wave



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

NEWS

OBE award for renowned deep sea scientist

A Scottish scientist who became one of the world's foremost researchers in deep sea ecology has been awarded the OBE in the Queen's Birthday Honours List. Edinburgh-born Dr John Gordon, who lives in Easdale, Isle of Seil, spent his whole research career at the Oban-based Scottish Association for Marine Science (SAMS) after completing a PhD at Edinburgh University.



Dr John Gordon in his home village of Easdale, Isle of Seil

Dr Gordon began his research in the shallow waters of the Firth of Lorn but, with the

commissioning of the RRS Challenger in 1974, he moved into deeper waters (500 to 1,500 metres) to the west of Scotland's continental slope, working on the biology of the bottom-living fish which were later to be commercially fished. His work contributed greatly to our knowledge of food chains in the deep sea and how commercial trawling affects fish populations in deeper water.

Dr Gordon said: "I was greatly surprised and of course honoured to be recommended for an OBE for services to science. I had to go back several times to the letter to make sure it was true !. In accepting this honour I have to acknowledge that none of this would have been possible without the support of whole SAMS community over the years. I owe a great debt of gratitude to John Mauchline for his early guidance and collaboration in later years and to Janet Duncan and Sarah Swan for dedicated scientific support. Finally, I have to thank the ship's companies of RRS Challenger for many enjoyable days at sea, many of which were before the days of satellites and instantaneous communication and navigation – the simple life."

Other key investigations by Dr Gordon helped to determine the age and stock identification of deep water commercial fish. In 1994 he was named Buckland Professor, which involved giving public lectures on deep water fisheries at venues throughout the UK. In 1995 he was appointed chairman of the International Council for the Exploration of the Sea (ICES) Study Group on the Biology and Assessment of Deep-sea Fishery Resources, a post he held until 2000 and he also provided advice and evidence to organisations such as the European Commission, the North East Atlantic Fisheries Commission (NEAFC); the Scottish Government and the House of Lords Select Committee on Science and Technology.

Professor Geoffrey Boulton, President of SAMS, commented: "The Earth is a water planet, with 71

per cent of its surface covered by oceans that are essential to the maintenance of life. John's work on the deep ocean biosphere and the implications of its exploitation is a fundamental contribution to the vital understanding of the oceans that is necessary for a sustainable human future. The whole SAMS community is delighted by this recognition of John's seminal contribution to this understanding."

Dr Gordon retired in 2002 as Principal Scientific Officer at SAMS but remains an Honorary Research Fellow. His international reputation kept him busy as a keynote speaker and with several consultancies. He is married to Kathleen, with whom he has two children, Hamish and Colin.

President's photographic competition

At every Challenger Conference we invite attendees to submit entries to the President's Photographic Prize. For the Liverpool conference we are looking for beautiful and entertaining pictures under the theme of "*what the oceans mean to me*".

This title is deliberately designed to be broad ranging and allow you all to bring your creativity to bear to impress your friends and colleagues. There will be fabulous prizes for the best pictures (judged by the President and President Elect) and we anticipate using them in future publications of the society, with the artist's permission of course. So please start planning to bring your best photographs to Liverpool. Details of how to submit pictures will be posted on the conference website nearer the time. - **Tim Jickells and Rachel Mills, President and President Elect**

VIEWS

Coral reef scientists make waves at London Symposium – reef protection is not enough

'Rethinking the Future of Coral Reefs' was the theme of a symposium, held on the 6th and 7th of June, at St. James's Palace to discuss solutions to serious losses on coral reefs over the last 40 years. Dr. Carrie Manfrino, President of the Central Caribbean Marine Institute in the Cayman Islands and convener of the Symposium, commented on the results: "We want to stress the global nature of the problem of coral reef decline and how we as the scientific community

must reframe our thinking on how to protect and conserve this enormously valuable asset. We recognize that what we have been doing is not working – it is time for a fresh approach," she said.



Photo Credit: Diana Schmitt

Coral reefs are second only to the rainforests as the most biologically diverse environment on earth. They provide a home for 25% of marine life in the ocean and play a vital role in protecting coastlines from storm and hurricane damage. The group has declared that all of the world's coral reefs are threatened due to three main causes - climate change, over-fishing, and pollution - though there are many other reasons that have contributed to their decline. They also agree that marine protected areas are not sufficiently protecting coral reefs. The elevated sea surface temperatures in response to the 2015-2016 El Nino led to coral bleaching in the Caribbean last summer and across the Great Barrier reef earlier this year. Corals across the Indian Ocean including in Sri Lanka, where CCMI's Director of Research and President is

currently a Fulbright Scholar, are currently bleaching and in a fragile state.

Corals turn white (bleach) in response to prolonged increases in sea surface temperature. They are white because the tiny symbiotic algae that provide their colour are released as a stress response mechanism that scientists are still trying to understand. When they bleach, corals are still alive and can recover when temperatures return to normal. But if temperatures don't return to normal within a number of weeks, coral mortality can have a devastating impact on the reef ecosystem. "The reality is that while marine protected areas can boost the entire system's resilience, mass mortality from coral bleaching occurs across the boundaries of protection. What is clear is that reducing direct human impacts on stressed coral reefs is required for recovery. In the Cayman Islands, at several locations on the Great Barrier Reef and in the Indian Ocean, it took between 9 and 12 years for corals to recover from the 1998 massive coral bleaching event", said Manfrino.

What this implies is that human impacts need to be reduced to allow time for corals to recover but it may become more difficult for recovery if El Nino events occur more frequently as temperatures continue to rise.



High reef fish biomass at a remote central Pacific coral reef island. Credit: Brian Zgliczynski (Scripps Institution of Oceanography).

Seven presentations were made at the Symposium, including some of the world's leading scientists: Professor Terry Hughes, Professor Nick Graham, Dr. Gareth Williams, Professor Joshua Cinner, Dr. Rachel Turner and Jerker Tamelander, who covered topics including "International Policy & Reef Management" and

"Drivers of Natural Variation in Coral Reef Ecosystem State".

Dr. Gareth Williams proposed several new solutions: "We must take a two-pronged approach to managing the world's coral reefs. We need to urgently cut greenhouse gas emissions to slow the frequency of severe coral bleaching events, while simultaneously manage reefs at a local scale to promote resilience. Local-scale action alone will not be enough; we cannot climate-proof coral reefs. However, the good news is local reef fates are likely different from regional projected fates which are determined by global climate models. This smaller scale variation in reef vulnerability means we can prioritise local-scale action. By comparing local vulnerability to current management we can identify key conservation opportunities, for example areas where supporting human adaptive capacity is essential or areas where managers can have the greatest influence on long-term reef condition and ecosystem service provision".

Jerker Tamelander, Head of the Coral Reef Unit of the United Nations World Conservation Programme (UNEP) in his presentation, reported: "2015 saw the adoption of the Paris Agreement on climate change and the 2030 development agenda. The future of coral reefs is determined by how these agreements are implemented." Looking ahead at the dangers posed, he went on to say: "We stand to lose a significant portion of the world's coral reefs in the coming decades. It is critical that we protect reefs, to improve chances that coral reefs will adapt and continue to deliver ecosystem services in the future."

CCMI gives NOAA scientist seal of approval

The Central Caribbean Marine Institute (CCMI) has awarded a National Oceanographic and Atmospheric Administration (NOAA) climatologist, Dr Karsten Shein, a Research Fellowship. CCMI's Research Fellows are honorary appointments to establish collaborations that are mutually beneficial with scientists who are invested in coral reef research. Collaborations with professional scientists increase the capacity of CCMI to conduct research in areas that would otherwise be impossible. Dr. Shein is helping to improve CCMI's understanding of the ocean and atmospheric dynamics that directly relate to coral reef stress and resilience.

CALENDAR

"I am grateful for this opportunity," expressed Dr Shein. "I believe it will benefit the science of climate change and coral reefs beyond our expectations." Dr. Shein has led several major international scientific projects, and at CCMI's Research Centre on Little Cayman (LCRC), he has installed environmental instrumentation that is helping to understand the influence of ocean microclimates on coral health. He has authored over 200 articles and given more than 75 professional presentations.



Dr Karsten Shein on a research dive.

"Dr Shein has made numerous contributions to the research here at CCMI and has taken on a role of mentoring early career scientists as well," stated Dr Carrie Manfrino, president of CCMI. "He is more than deserving of this award, and we look forward to continuing our studies with him." CCMI is a local not-for-profit organisation dedicated to research, education, and conservation of coral reefs. The LCRC serves as a home-base for scientists who are conducting vital research on coral reef ecosystems.

SALTS

No news from sea this month I'm afraid

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

5th-8th September 2016: 17th Biennial Challenger Society Conference: Oceans and Climate

Liverpool, UK

Keynote speakers for the 2016 Challenger conference have been announced. Details are on the conference website along with session details,

<https://www.liverpool.ac.uk/challengerconference-2016/>. See you in Liverpool in September, the Challenger 2016 Organising Committee csmsenquiry@noc.ac.uk

12th-16th September 2016: CIESM Congress

Christian Albrechts University, Kiel, Germany

The 41st CIESM Congress will take place in mid-September in Kiel, on the Baltic shore, at the kind invitation of the German Government; this will be the first time that our Congress takes place in Germany, which has been a Member of our Commission since 1969. Our Meeting, one of the largest multi-disciplinary fora in marine science, will present a major opportunity not only for researchers working on the Mediterranean and Black Seas, but also to any investigator from the Red Sea all the way to the Kara Sea, including the Atlantic shores, to come and share / compare / discuss their scientific approaches and latest findings in some 90 distinct sessions that will cover key issues. The sectors will range from marine geo-sciences, ocean climate, marine food-webs, invasive species, to marine plastics, biotechnology, geo-chemistry and marine policy. Note that each session will include a 30 minute-debate with the audience.

The link, www.ciesm.org/marine/congresses/Kiel.htm, will lead you to our Congress web pages, with details on the many Congress themes. We look forward to see many of you in Kiel in September. With my best regards, Frederic Briand, Director General, The Mediterranean Science Commission, CIESM

14th-15th September 2016: 58th Marine Measurement Forum

Plymouth Marine Laboratory, Plymouth, UK

The Marine Measurement Forum (MMF) is a series of non-profit making events that provides opportunities for the informal exchange of ideas, knowledge, techniques and developments across

an extensive range of marine scientific measurement activities. The main event will be held on the 15th September with a series of 20 minute presentations and networking breaks. As it is anticipated that many delegates will be staying in Plymouth on the 14th and with generous sponsorship from both the Plymouth City Council and PML a networking/social dinner has been arranged at the National Marine Aquarium. Please see website for full details:

http://www.pml.ac.uk/Media_and_events/Events/Marine_Measurement_Forum

Plymouth Marine Laboratory in partnership with Plymouth City Council and other marine research organisations are hosting its first Marine Tech Expo on 14th September 2016. The expo will be the first of a series designed to showcase Plymouth's marine credentials across the world in the run up to the Mayflower 400 celebrations in 2020. MMF delegates are encouraged to join this free event hosted at the new University of Plymouth Marine Station. Further details can be found on the website.

26th-29th September 2016: 7th EGO Conference on Autonomous Ocean Gliders and their Applications

National Oceanography Centre, Southampton, UK

The 7th EGO conference, <http://conference.noc.ac.uk/ego-conference>, will provide a forum in which scientists, engineers, students and industry can exchange knowledge and experiences on the development of glider technology, the application of gliders in oceanographic research and the role of gliders in ocean observing systems. We invite oral and poster presentations on any aspect of underwater glider technology and its application in marine science. The final program is anticipated to include the following themes:

- New developments in glider and sensor technology
- The role of gliders in Ocean Observing Systems
- Observing biogeochemical processes with autonomous vehicles
- Micro-scale to meso-scale physical processes observed with underwater gliders
- Gliders in polar oceans: science and technological challenges
- Sampling strategies for single vehicles and networks
- Glider operations: piloting, infrastructure, data management and legal issues

www.challenger-society.org

The 7th EGO conference will be held at the National Oceanography Centre (NOC) in Southampton, UK. The NOC now hosts the largest and most diverse research fleet of marine autonomous systems in Europe in purpose built facilities including the new Marine Robotics Innovation Centre, where marine businesses work alongside NOC's scientists and engineers. The opening session of the meeting will start at midday on Monday 26th September and the meeting will finish at 16:00 Thursday 29th September 2016.

19th–21st October 2016: MASTS Annual Science Meeting: "Our Marine Environment – a Shared Resource"

Technology & Innovation Centre, Glasgow, UK

Announcing the sixth Annual Science Meeting (ASM) of the Marine Alliance for Science and Technology for Scotland (MASTS). Now the largest gathering of marine scientists in the UK, 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 and practitioners 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.

Abstracts to the 2016 MASTS Annual Science Meeting should be submitted before **16:00 on Friday 5th August 2016** to masts@st-andrews.ac.uk using the [abstract template document](#). Abstracts can be submitted to one of the following areas:

General Science Session
[Numerical Hydrodynamic Modelling](#)
[Marine Biogeochemistry](#)
[Physical Oceanography](#)
[Science in the Clyde](#)

For more information: <http://www.masts.ac.uk/annual-science-meeting/2016-abstract-submission/>

Science presentations and e-poster sessions will take place on the first two days, together with opportunities to network. MASTS also welcomes the European Marine Board who will be hosting their autumn meeting alongside the MASTS ASM. On the third day, the venue will host a number of

meetings and workshops. If you would like to host a workshop or side meeting, or if you would like to exhibit at the ASM, or showcase a piece of equipment please contact ecd2@st-andrews.ac.uk for details

We also invite you to join us at the conference dinner to be held on the evening of Wednesday 19th October at the Millennium Hotel Glasgow (featuring MASTS own Prof Nick Hanley and his Hoochie Coochie Ceilidh band). The MASTS ASM is an inclusive event and we encourage all members of the Marine Science community to attend, whether you are based in Scotland, the UK or further afield. Everyone is welcome, so please circulate this notice widely. For more details visit <http://www.masts.ac.uk/about/annual-science-meeting.aspx> or contact me at ecd2@st-andrews.ac.uk. We look forward to welcoming you at the MASTS ASM. Early bird registration for the event will open on Friday 8th July.

15th-17th November 2016: SUT 2016 Technical Conference, The Future of Underwater Technology

London, UK

The conference will be held in London (UK) to celebrate the 50th anniversary year of the Society. It aims to attract the best authors in their field from across the world to showcase new technologies, products, best practices and in particular foresight the next generation of subsea engineering, marine science, and all aspects of underwater technology. It will be a flagship event for the Society and it is the intent for it to become a regular occurrence and be held in future at SUT global centres around the world.

Academics, Consultants, Engineers and Scientists, Business Executives and Managers, Lawyers, Insurers and Underwriters, Researchers, Technicians, Young Professionals and Students are some of the people we expect to see at the conference. There are also opportunities for sponsorship and to take up exhibition space. The venue will allow provision for vessel access alongside.

The programme will consist of plenary sessions, technical sessions, and student poster displays. Substantial effort will be made to ensure the highest quality programme with emphasis on the theme of the event. The final programme will be developed by the Technical Steering Committee which will be made up of representatives from the

whole SUT organisation including Branch Committees, Special Interest Groups, and Council, www.sut.org/event/sut2016.

6th-7th September 2017: Advances in Marine Biogeochemistry Conference VIII

Oban, UK

Save the date for AMBIO VIII, more information nearer the time, www.challenger-society.org.uk/Marine_Biogeochemistry_Forum

Advances in
Marine

SAMS



Biogeochemistry
Conference VIII

Save the date!

6 – 7 Sept 2017

at SAMS in Oban

Marine Biogeochemistry Special
Interest Group of the Challenger Society



Organisers:

MBF Chair: Gary Fones, Uni. Portsmouth

AMBIO VIII Co-convenors: Kirsty Crocket and Natalie Hicks, SAMS

Photo: Emma Defew and Mark James

AMBIO meetings set the stage for Marine Biogeochemistry in the UK, connecting disciplines within the field and establishing networks for the integration of early career scientists. The AMBIO VIII meeting in September 2017 is to be hosted at the Scottish Association for Marine Science in Oban. Save the date! Registration will open in early 2017.

Info: www.challenger-society.org.uk/Marine_Biogeochemistry_Forum

Contact: kirsty.crocket@sams.ac.uk, natalie.hicks@sams.ac.uk

2nd-6th October 2017: the 5th IMBIZO

Woods Hole, MA, USA

Mark the dates !, IMBER will hold its fifth IMBIZO (the Zulu word for a gathering) at the Woods Hole Oceanographic Institute. The theme of IMBIZO V will be: *Marine biosphere research for a sustainable ocean: Linking ecosystems, future states and resource management*. We will follow the usual IMBIZO format of three concurrent but interacting workshops – topics to be announced soon. Please spread the news widely.



CSMS email addresses are president, admin, membership, secretary and treasurer@challenger-society.org. Contributions for next month's edition of Challenger Wave should be sent to: john@vectisenvironmental.com by the 29th July.

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

NERC's Open Innovation Internships are open for application.

These allow interns to work within a non-academic organisation, on a project of their choosing, and explore how host organisations can make use of scientific knowledge, data, models or other tools to understand and manage their impacts or dependencies on the environment. Applications for internships should focus on accelerating and amplifying economic impact and improvements in quality of life from NERC-funded research, by working with business, non-governmental organisations or government bodies. This includes:

- strengthening existing partnerships;
- developing new relationships that lead to collaborative projects;
- researching new market opportunities;
- providing case studies of knowledge exchange from NERC-funded research;
- providing briefings and reports suitable for policymakers.

Projects may involve one or more non-academic partner and one or more researchers. Applicants must be resident in the UK and be employed by an eligible UK research organisation. The intern must be employed by their host institution for the duration of their fellowship. PhD students may apply providing they are at least in their second year of research. Researchers at any career stage, who can demonstrate how NERC funded research could be used to make a real difference to non-academic organisations, may also apply.

NERC offers a minimum of £100,000 to support open internship projects, which may last for up to six months. Appointees will usually spend 80 to 100 per cent of their time on the project. NERC will pay for direct salary costs, national insurance and superannuation, travel and subsistence costs, whereas the partner organisation is expected to cover the overhead costs of hosting the intern.

Deadline: 21st July

More information can be found here: <http://www.nerc.ac.uk/funding/available/schemes/internships/open-innovation/>
