

Challenger Wave



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

NEWS

Congratulations to Professor Tim Jickells

Professor Tim Jickells, our society president, has been made a Fellow of the American Geophysical Union, being one of only three British scientists among the 60 honoured this year. This honour recognises scientific eminence in the Earth and space sciences and acknowledges Fellows for their remarkable contributions to their research fields, exceptional knowledge and visionary leadership. Only 0.1% of AGU membership receives this recognition in any given year.



The official announcement is in the link below.
<https://eos.org/agu-news/2016-class-of-agu-fellows-announced>

Winner of this year's tripartite award

We are delighted to announce that the winner of this year's tripartite prize awarded by the Challenger Society for Marine Science (CSMS), The Institute of Marine Engineering, Science and Technology (IMAREST) and the Society for Underwater Technology (SUT), for the best project by a BSc student in marine science,

engineering or technology will be awarded to Sam Black based at the Scottish Association of Marine Science (SAMS) and the University of the Highlands and Islands (UHI). Sam's project, entitled Origin of *Fucus distichus* in Svalbad, was supervised by Dr Claire Gachon and involved field work in Svalbad, followed by laboratory genetic studies.



Sam will be presented with his prize at the Challenger Conference in Liverpool in September. You can find an article about Sam's project in our VIEWS section on page 4.

Agreement to support further development of the European Marine Observation and Data Network (EMODnet)

On the 8th July, the European Commissioner for Environment, Maritime Affairs and Fisheries, Karmenu Vella, visited the EMODnet Secretariat Office in Oostende, Belgium. He attended a formal signing ceremony with the Secretary General of the Department of Economy, Science and Innovation of the Flemish Government to

mark the agreement with Flanders to support the further development of the European Marine Observation and Data Network (EMODnet); a core component of the European Commission's Marine Knowledge 2020 Initiative which aims to unlock the economic potential of Europe's wealth of marine observations and data.

During the visit, Commissioner Vella said: "EMODNet is one of the most important achievements of the EU's integrated maritime policy. I am very grateful to the Flanders Government for this decision, which shows our shared commitment towards open data on seas and oceans and towards innovation in the blue economy".



The Commissioner's visit underscores the importance of EMODnet for the European Commission, reflecting the growing understanding that unrestricted access to high quality marine data is crucial to support an expanding European 'blue economy' whilst simultaneously protecting and preserving our marine resources; and that EMODnet is instrumental in achieving this. Previously much of the marine data collected in Europe was largely unavailable, inaccessible or not usable. EMODnet has changed the face of the European marine data landscape and is developing tools to connect national data and information resources to make them easily available for multiple users, for multiple purposes.

More information about the visit and EMODnet can be found at <http://www.emodnet.eu/CommissionerVisit> and http://ec.europa.eu/information_society/newsroom/cf/mare/itemlongdetail.cfm?subweb=342&lang=en&item_id=32997. All EMODnet Data Portals can be accessed via <http://www.>

www.challenger-society.org

emodnet.eu. - **Jan-Bart Calewaert**, Head, EMODnet Secretariat

SCUBA divers have an important role in monitoring the temperature of our oceans

Did you know that each time you scuba dive you could be collecting data which can help scientists better understand our seas and oceans ? The potential for scuba divers to provide vital information about the temperature of our oceans has been demonstrated for the first time using 'citizen science'. A study published in July in Nature's online journal Scientific Reports (<http://www.nature.com/articles/srep30164>) has shown that temperature profiles from scuba divers' computers can be compiled to provide accurate records across the globe that add to our existing monitoring network in inshore areas. This offers additional data that could help us better understand our marine environment.

Dr Serena Wright (Cefas), lead author of the study, said: "Our results show that, with processing, dive computers can provide a useful and novel tool with which to augment existing monitoring systems all over the globe, but especially in under-sampled or highly changeable coastal environments.". The work, led by the Centre for Environment, Fisheries & Aquaculture Science (Cefas) in collaboration with the Scottish Association for Marine Science (SAMS), developed the 'dive into science' website (<http://www.diveintoscience.org>) that collected more than 7,600 temperature records from sport divers to build up a record of global sea temperature in the first 'citizen science' project of its kind.

Dr Kieran Hyder (Cefas), who led the citizen science project, said: "To undertake a global science programme that could generate this information would be hugely expensive, but there are millions of sport and commercial dives every year. Making use of just a small fraction of those dives will greatly increase our knowledge of what is happening world-wide."

Co-author Dr John Pinnegar (Cefas), lead advisor on climate change, said: "The coastal environment is an important region of our oceans and is vulnerable to pressures brought about by increasing human populations and climate change. The 'dive into science' initiative can help generate the large datasets often required to support and improve management decisions." The temperature recordings were downloaded

from decompression computers that are commonly worn by sport divers, but the accuracy of these records was unknown. Comparisons made by 'diving' computers alongside scientific instruments and with satellite measurements of water temperature in this study showed that diver computers can provide accurate records.

Co-author Dr Martin Sayer leads the Natural Environment Research Council's National Facility for Scientific Diving (NFSD) based at the Scottish Association for Marine Science (SAMS), near Oban and has conducted numerous studies on the performance of dive computers. He said: "What we are hoping is that the results from this study will encourage manufacturers and their customers to see the potential benefits of developing new dive computer models that not only support the diver but also produce high quality oceanographic data."



Dr Hyder acknowledges that there is still some way to go before he achieves his ultimate vision of a global oceanographic resource that is developed and maintained through citizen science; he said: "This has been a very successful proof of concept. The next stage is to work with dive computer manufacturers, potential user groups, diving organisations and the divers themselves to improve the quality of the information and the user experience." He added: "The potential of scuba divers to contribute to ocean monitoring is huge and I believe that this study demonstrates only the tip of the iceberg. I would encourage all scuba divers to get involved."

Cayman reef researchers are newest members of WCPA

The Central Caribbean Marine Institute (CCMI) has been admitted as a member of the World

Commission on Protected Areas (WCPA), a subdivision of a larger environmental network; the International Union for Conservation of Nature (IUCN).

With over 2,500 members and spanning more than 250 countries, WCPA provides strategic advice; working with governments and other environmental groups in the implementation of marine protected areas worldwide. "It's a perfect match," said Carrie Manfrino, president of CCMI. "Like ourselves, WCPA is dedicated to carrying out its mission to declare more of our ocean areas protected. We look forward to confidently sharing our extensive knowledge on coral reef restoration and conservation with leading scientists from across the globe."

As a member of the WCPA, CCMI is invited to attend IUCN's World Conservation Congress in Hawaii this September. Held every four years, the event is an opportunity for members and partners to engage in public discussion on issues of relevance to the program through workshops, exhibitions, and lectures. It boasts an impressive list of sponsors and supporters, including the National Geographic Society, the World Bank Group, the United Nations, and Sir David Attenborough.

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 can be found on the conference website at <https://www.liverpool.ac.uk/challenger-conference-2016/photo-competition/>. - **Tim Jickells and Rachel Mills, President and President Elect**

VIEWS

CCMI Bright 'Sparke' accepted on Education Committee

Tom Sparke, education programme manager at the Central Caribbean Marine Institute (CCMI), resident in Little Cayman, has recently joined a newly formed education committee of a prominent reef science society. The International Society for Reef Studies (ISRS) comprises reef scientists and managers, working together to promote global awareness of coral reef conservation. Members of this not for profit organization are involved in providing support to various academic institutions, marine laboratories, and other conservation institutions.



Tom Sparke, dissecting a lionfish with students as part of a CCMI education programme.

"It is a privilege to be a member of the first ISRS Education Committee," said Mr Sparke. "At CCMI we are making huge strides in bridging the gap using new technology and immersive teaching techniques. I am excited to share these successes through the committee." ISRS's education committee will manage the society's environmental education and public awareness activities; offering seminars and presentations to universities, as well as working with other organizations on reef education projects.

Mr Sparke said he was looking forward to future collaboration with the committee, and expressed his enthusiasm for combining science with education. "Sharing innovative ideas with like-minded scientists is a fundamental tool required to protect and restore our coral reef systems for future generations," he explained. "Therefore this is a great achievement, but one which does not

belong solely to CCMI – this is Cayman's achievement as well."

SAMS UHI student who traced ancient algal 'family tree' wins UK research prize

A student from the Scottish Association for Marine Science (SAMS UHI) has been praised by the UK's marine research community after it voted his dissertation as the best in the UK (see NEWS item on the front page). The University of the Highlands and Islands student has also been named as Student of the Year at the Oban-based SAMS UHI, where the 22-year-old has been studying a BSc in marine science.

Sam's dissertation used DNA analysis to study four Arctic populations of rockweed, in order to establish the species' migration patterns in the North East Atlantic. Because the species has evolved and moved around the northern hemisphere over millions of years, the shape of its family tree is a complex one but Sam's project aimed to resolve the 'Svalbard branch' of this family tree to help make the overall picture more clear. Understanding how it has adapted and responded to a changing climate in the past gives scientists an insight into how this species, and others, may react to a rapidly warming Arctic.

"It was a wonderful surprise to be awarded the Tripartite Undergraduate Dissertation Prize by the Challenger Society," said Sam. "I undertook the project with little experience in the field so it was a steep learning curve and a challenge at every step. Being recognised by the society was extremely humbling and I would like to thank my supervisors and the staff at SAMS UHI and at the University Centre in Svalbard (UNIS) for making it all possible."

Sam, who is originally from Dunbar, East Lothian, will receive his award and a £500 prize at the Challenger Conference in Liverpool in September. By that time he will have started an MSc in Climate Change at the University of Copenhagen.

Dr Gachon, SAMS UHI's principal investigator in molecular phycology, congratulated Sam on his achievement, adding: "It is a huge challenge for a student to design their Honours project alone, and to assemble an interdisciplinary team of researchers based in different institutions. To his credit, this is exactly what Sam did, successfully completing field work in limited time in the Arctic,

followed by molecular analysis at SAMS. All along, I have been impressed by his general curiosity, and the breadth of topics he researched to complete his dissertation.”



Sam Black conducts fieldwork in Svalbard. Picture by Stuart Thomson.

Prof Tim Jickells, President of the Challenger Society, said: “All the submissions received by the award committee represented some of the very best work done by marine science undergraduate students in the UK. The projects were reviewed by a committee and all were truly of an excellent standard, presenting the judges with a difficult task. Sam Black’s project stood out for the breadth of the work done, from fieldwork in Svalbard to laboratory genetics, and also for the clarity with which a difficult subject was explained within the context of its broader implications for our understanding of biodiversity. This was a really impressive project.”

Central Caribbean Marine Institute expands thanks to NSF

The National Science Foundation (NSF) has provided a facilities grant to the Central Caribbean Marine Institute (CCMI)’s research center in Little Cayman that will significantly improve operations capacity and the overall outputs of the research center.

Both the NSF and CCMI have missions to foster the integration of science and education to improve science, technology, engineering and

mathematics (STEM) studies through science education, internships and fellowships. The NSF grant will enable CCMI to create additional on-site private accommodation for scientists and graduate students; expand common areas including the kitchen, dining pavilion and the bathhouse to match the residential capacity; and make safety upgrades to reduce the risk of damage in the event of a hurricane.

CCMI president Dr Carrie Manfrino is grateful for the grant award. “One example of how these renovations will positively impact our operations is that we expect these improvements will add up to two hours a day of field, lab and class work through streamlining the capacity to serve meals and accommodate more people on site. This will help support our goal of developing early-career scientists and foster the pursuit of scientific discovery that culminates in present and future generations of active environmental stewards,” she said.

The Little Cayman Research Center was the region’s first ‘off-the-grid’ facility when it was built in 2005. An important element of this upgrade project is to further demonstrate that sustainable alternatives, including passive and photo-voltaic solar systems, can comfortably replace conventional, resource-intense facilities.

CCMI has provided hundreds of scientists and students with field support, accommodation and access to laboratories and workspace since its opening and has continued to expand its programs; most recently with the introduction of a citizen science program and a ‘Dive With Heros’ program, aimed at disabled US veterans. CCMI is the premier ocean science and research institute in the region, specialising in looking at resilience, regeneration and protection of coral reefs.

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

CALENDAR

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/challenger-conference-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.

The CIESM 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 geosciences, 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. The 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.

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.

A workshop on *Decommissioning and Wreck Removal* will take place in Glasgow at the MASTS Annual Science Meeting, on the 20th and 21st October, contact Izzie Bryce, IBryce@decomnorthsea.com for more information.

There are a number of training opportunities available at the MASTS ASM on Friday 21st October:

- Choice Modelling for Ocean and Coastal Management
- Modelling your data: a hands-on introduction to dynamical systems and Bayesian statistics for postgraduates and early career researchers

For more details please visit - <http://www.masts.ac.uk/annual-science-meeting/2016-workshops/>. Registration and booking for these workshops is here - <http://www.masts.ac.uk/annual-sciencemeeting/registration/>

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

IBryce@decomnorthsea.com by COB, Friday 8th August.', 'This joint SUT/MASTS Workshop brings together operators, engineers, scientists, salvagers, regulators, insurers, financiers to consider these three fundamental areas to consider topics from a life cycle evidence based approach.', 'For further information, please contact: Karen Seath, General Manager, Decom North Sea, kseath@decomnorthsea.com 01224 452 169'."/>

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 Biogeochemistry Conference VIII

SAMS The Challenger Society for Marine Science

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.



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 31st 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

No job adverts sent to me this month i'm afraid, come on let's get writing those grant proposals ! – Ed.
