

Challenger Wave



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

NEWS

New Scots research base to study sea life

A harbour-side research station will become a base for studies aimed at boosting understanding and conservation of the marine environment under a new collaboration launched in October this year.

Scottish scientists will use St Abbs Marine Station to study the complex interactions between the sea and humans as part of a partnership between a charity and Edinburgh Napier and Heriot-Watt Universities, members of the Marine Alliance for Science and Technology for Scotland (MASTS). It is hoped that the state-of-the-art facility in Berwickshire, which is particularly well suited for climate change-related studies, larval research and studies on life-cycles and rearing techniques, will become a key training ground for the next generation of marine scientists.

The marine station, a registered charity funded by private donors, is the culmination of four years of planning, development and construction work in the historic harbour village. Dedicated to marine science, conservation and education, it boasts a laboratory, offices, a 275 m² research area for aquaria and a separate 100,000-litre mesocosm tank. All tanks are provided with a continuous supply of fresh seawater and are under a transparent roof, allowing natural light throughout the research area.

Stephen Nesbitt, Chairman of the Trustees of St Abbs Marine Station, will today further the charity's conservation and education objectives by signing a tripartite collaboration agreement with Professor Andrea Nolan, Principal of Edinburgh Napier University, and Professor Richard Williams, Principal of Heriot-Watt University. The agreement will see senior research staff from the

academic partners, Dr Karen Diele from Edinburgh Napier and Dr Bill Sanderson from Heriot-Watt, being seconded to the marine station as Co-Directors of Research to develop an innovative and challenging research programme for the facility.

The marine station is already giving PhD students opportunities to conduct research, and undergraduate and postgraduate students engaged with marine biology at the two universities will also benefit significantly from the collaboration. The station will also offer other MASTS members opportunities to engage in research at St Abbs.

Stephen Nesbitt said: "Building the station was a great effort involving the hard work and support of many people, not least in the local community. I am now very excited to see our next aim being achieved, the realisation of marine research on a wide range of matters of scientific interest and environmental concern, focusing on the wonderful marine environment here at St Abbs and the North Sea."

Professor David Paterson, Executive Director for the Marine Alliance for Science and Technology for Scotland, said: "MASTS is delighted to see this collaboration. This tripartite arrangement is an innovative example of structured co-operation between publicly and privately funded marine science bodies."

Dr Karen Diele said: "The station is a jewel for scientists and students alike, and I am very much looking forward to developing ambitious and exciting research with my partners here at St Abbs. Our future research programme will aim to provide the scientific basis for the conservation and sustainable use of the fascinating marine environment at our doorstep."

Dr Bill Sanderson said: "This new centre provides a wonderful opportunity to develop the sustain-

able management of marine resources. The generosity involved in this unusual public/private partnership will provide the capacity to deliver sustainable conservation management in a changing world, especially, we hope, to the benefit of the local community and local biodiversity.” For further information please email: hello@marinestation.co.uk

VIEWS

2016 UK Antarctic Science Conference

We are pleased to announce that the 2016 UK Antarctic Science Conference will be held at the University of East Anglia in July 2016. The conference will run from lunchtime Tuesday 5th July to lunchtime Thursday 7th July. We welcome everyone working on Antarctic or Southern Ocean science, including techniques such as in situ measurements, numerical models, laboratory experiments or remote sensing. The conference welcomes all science disciplines, including cryosphere, earth, atmosphere, marine, climate and life sciences.

There are rooms booked for associated meetings Monday - Tuesday and Thursday - Friday, so if you would like to organise a side meeting (e.g. UK Polar Network, Sea Ice group) then please contact us. Likewise we would like to hear from you if you are interested in sponsoring the conference or having a stand or display at the conference. We look forward to welcoming you to Norwich. Details of the conference website, deadlines, registration and abstract submission will follow shortly. – **Prof. Karen Heywood**
k.heywood@uea.ac.uk

Society for Underwater Technology (SUT) Future of Underwater Technology Conference

Abstracts are now invited for submission of papers for the SUT Future of Underwater Technology Conference 2016. 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

www.challenger-society.org

in future at SUT global centres around the world.

The SUT Technical Conference 2016 will offer:

- First class sessions and networking
- Opportunity to connect with underwater engineering, science, and business professionals from around the world and progress your knowledge
- A showcase for the latest technologies in subsea engineering, marine science, and all aspects of underwater technology
- An opportunity to see and meet the talent of students and young professionals that are emerging as the next generation in our industry
- The conference will have an intimate exhibition area which will provide excellent opportunities for networking and knowledge exchange.

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.

SALTS

Success for the SMILES Project

Earlier this year Dr. Phil Hosegood (Plymouth University) led a team to the Southern Ocean on the RRS James Clark Ross, as part of the NERC-funded SMILES project (Surface Mixed Layer Evolution at Sub-mesoscales). The team from Plymouth University, Cambridge University, L'OCEAN (Paris) and the Plymouth Marine Laboratory (PML) went out to identify and measure sub-mesoscale features along the Sub-antarctic front, southeast of the Falkland Islands. Such features are known to have strong vertical velocities, important for exchanges between the atmosphere and mixed layer of the oceans.

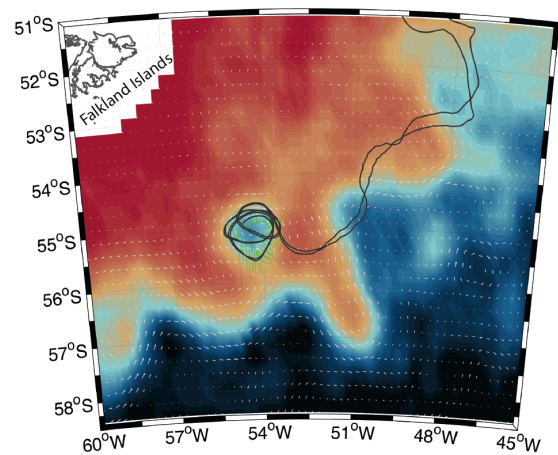
Daily satellite images and forecasts from PML and the Met Office allowed the team to identify real-time features of interest. They were targeting a sharp meander along the Antarctic Circumpolar Current (ACC), when it unexpectedly pinched off

to form a cold-core eddy. The team was able to track the eddy post-cruise for nearly three months using drogued drifters constructed by Plymouth University scientists and technicians, ARGO floats and remote sensing fields.



During the cruise, unusually calm weather allowed the SMILES team to map the structure of the eddy features in detail. Over 50 SeaSoar and MVP towed-CTD sections provided a suite of measurements, alongside those mounted on a CTD rosette. The team also investigated turbulence associated with the eddy (a key part of the project) using a Microstructure Sensing System. Biogeochemical constituents, such as nutrients, were also sampled across the eddy allowing the team to link the importance of the physical processes to the surrounding ecosystem.

A pioneering feature of the SMILES project is the synthesis of observational data collection and high resolution numerical modeling. The data modeling team from Cambridge University participated in the cruise and collection of data, allowing a comprehensive understanding of the data and how best to incorporate it into the models. They also informed the sampling strategy as the team mobilized in reaction to the eddy formation.



Sea surface temperature (remss oisst) and geostrophic surface current velocity vectors (AVISO) from 14 May 2015. Drogue drifter tracks (gray) circulated around a mesoscale eddy multiple times before traveling northward. Ship tracks (green) show repeated cross-frontal sections during a towed-CTD SeaSoar survey.

The collected observations from this successful cruise are informing a suite of fine-scale numerical simulations in an effort to further understanding of oceanographic processes at sub-mesoscales, particularly in the Southern Ocean.

For more information on the SMILES project visit: <http://www.smiles-project.org>

CALENDAR

14th-18th December 2015: AGU Fall Meeting San Francisco, USA

We would like to invite you to contribute a paper for the IMBER session (OS #21) Trajectories of change in the Southern Ocean that we are convening.

This session is a contribution to the IGBP celebration synthesis and is co-convened by the IMBER, SOLAS and PAGES core projects of the IGBP

Session ID#: 8669, Session Description:

The Southern Ocean is a critical part of the Earth system and host to unique and diverse marine ecosystems. The region is experiencing rapid changes as the climate continues to warm: dynamic and thermodynamic processes are affecting sea-ice cover, oceanographic processes, atmosphere-ice-ocean interactions as well as the Antarctic ice sheet. How will these changes alter the Southern Ocean's ability to absorb heat, carbon dioxide and support ocean productivity? Will

the changes result in feedbacks that accelerate or slow the rate of climate change? This session will address such questions by assessing recent insights from contemporary and palaeoclimatic observations and models. We solicit integrative contributions that explore topics such as sea ice, ice-sheet stability, biogeochemical cycling, atmosphere-ice-ocean processes and marine food webs. We will also consider contributions that explore the current and potential value of Antarctic ecosystem services and how they can be safeguarded.

<https://agu.confex.com/agu/fm15/preliminaryview.cgi/Session8669.html>

6th-8th January 2016: AMBIO VII, Advances in Marine Biogeochemistry Conference
University of Oxford, UK



AMBIO VII: Advances in Marine
Biogeochemistry
Conference

Save the date!



January 6th-8th 2016 University of Oxford
Coming to the Department of Earth Sciences: The 7th biannual meeting of The Marine Biogeochemistry Forum - Special Interest Group of The Challenger Society for Marine Science. Further announcements to follow.



17th-18th February 2016: Society of Maritime Industries Annual Conference
Hull, UK

Maritime Engineering: Exploring Business Opportunities in a Diverse Sector. As per previous editions the 2016 conference will include industrial visits, one-to-one meetings and an evening reception and dinner. The programme will soon be announced info@maritimeindustries.org

12th-17th June 2016: Gordon Research Conference on Ocean Biogeochemistry, Hong Kong

The 1st Gordon Research Conference (GRC) on Ocean Biogeochemistry will be held at the

www.challenger-society.org

Chinese University of Hong Kong. The topic of this first conference will be *The Biologically-Driven Ocean Carbon Pumps*.

Interested researchers, postdoctoral fellows and graduate students are invited to apply for participation as soon as possible on the GRC website (Online Application):

<http://www.grc.org/programs.aspx?id=17297>
[Nianzhi Jiao](#) and [Eileen E. Hofmann](#) (Chairs)
[Louis Legendre](#) and [Sylvia Sander](#) (Vice Chairs)

5th-7th July 2016: UK Antarctic Science Conference

UEA, Norwich, UK

We welcome everyone working on Antarctic or Southern Ocean science, including techniques such as in situ measurements, numerical models, laboratory experiments or remote sensing. The conference welcomes all science disciplines, including cryosphere, earth, atmosphere, marine, climate and life sciences.

There are rooms booked for associated meetings Monday - Tuesday and Thursday - Friday, so if you would like to organise a side meeting (e.g. UK Polar Network, Sea Ice group) then please contact us. We also look forward to hearing from you if you are interested in sponsoring the conference or having a stand or display at the conference.

We look forward to welcoming you to Norwich. Details of the conference website, deadlines, registration and abstract submission will follow shortly.

5th-8th September 2016: Challenger Society 2016 Conference

Liverpool, UK

The 17th Biennial Conference of the Challenger Society for Marine Science will be held at the University of Liverpool located within the heart of the city of Liverpool, famous for its maritime history, cultural diversity and exciting nightlife.

The 2016 Challenger Conference promises to provide a fantastic showcase of marine science and technology covering all areas of ocean research. The official conference programme will commence with an ice-breaker event on the evening of the 5th September followed by a three day lecture and poster programme, culminating in a conference dinner within the breathtaking Liverpool Anglican Cathedral.



Alongside the formal conference programme there will be early career events and education and outreach opportunities that continue the ongoing contribution of this conference series to our next generation of scientists. Free facilities are available for special interest groups and large projects that may wish to combine annual meetings with this important conference that already brings together large parts of the UK marine science community. A call for sessions will be announced in October 2015.

We look forward to welcoming you to the 2016 Challenger conference in Liverpool, jointly organised by the University of Liverpool, Liverpool John Moores University and the National Oceanography Centre.

12th-16th September 2016: CIESM Congress

Christian Albrechts University, Kiel

To All CIESM Friends, this will be the first time that our Congress takes place in Germany, which has been a Member of our Commission since 1969.



As many of you as possible, we hope, will join us next September on the Baltic coast to take part in the 41st triennial CIESM Congress. You will be able to present a paper (2 max) at the Congress on the double condition that (a) your paper is accepted by the relevant Committee Chair, and (b) it matches the list of themes selected by the CIESM Science Council www.ciesm.org/marine/congresses/themes.php If one or more of these themes match your research, you now have until early 2016 to prepare a brief Congress paper following the instructions given at www.ciesm.org/marine/congresses/CIESM41stCongress.pdf. The submission period will be open online from **4 January - 15 February 2016**. Precise info on the online submission procedure will be published in mid-December. With my best regards, Frederic Briand, Director General, The Mediterranean Science Commission, CIESM

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

London, UK

Abstracts are now invited for submission of papers for the SUT Future of Underwater Technology Conference 2016. 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.

The SUT Technical Conference 2016 will offer:

- First class sessions and networking
- Opportunity to connect with underwater engineering, science, and business professionals from around the world and progress your knowledge
- A showcase for the latest technologies in subsea engineering, marine science, and all aspects of underwater technology
- An opportunity to see and meet the talent of students and young professionals that are emerging as the next generation in our industry
- The conference will have an intimate exhibition area which will provide excellent oppor-

tunities for networking and knowledge exchange.

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.

General Guidelines

- Abstracts will be reviewed and a decision on acceptance will be made by the Technical Steering Committee (TSC).
- You must obtain the necessary permissions from your management/superiors to present/publish your paper.
- A brief abstract of 250-500(max) words is required for assessment and must be submitted on the abstract submission form (see below). Your abstract should include a description of the proposed paper, any results/conclusions, and the technical category most applicable to your paper (See website).
- Abstracts can be received any time up to 9th May 2016.
- Final written papers must be original and approximately 3000-5000 words.
- If accepted your paper will be published in the conference information media including the SUT website.
- Papers are to be technical in nature and SUT policy does not support the use of commercial trade names, company logos, or text that is overtly commercial in nature in the paper title, text, or slides. Use of such terms will result in careful scrutiny by reviewers evaluating abstracts.
- Presentation of papers at the conference will be in MS PowerPoint and are to be in a common conference format (template to be provided). Twenty minutes will be allotted to each paper, including introduction, presentation, questions and answers.

- Authors will be required to pay a fee (giving right to full registration – see website for registration fees) and present the paper at the conference. Failure to present the paper at the conference may exclude from publication.
- SUT have an Open Access policy. Papers will be published in digital format by SUT and will be archived on OnePetro.org. Selected papers will be assessed for publication in the Society's Journal, *Underwater Technology*.

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. Provision has been made for approximately 200 papers to be presented in plenary and parallel sessions throughout the 3 day event.

Call for abstracts open: Oct 2015

Deadline for abstract submissions: 9 May 2016

Authors notified: 10 Jun 2016

Deadline receipt of publication quality papers: 23 Sep 2016

Deadline receipt of conference presentation: 7 Oct 2016

Please use the abstract submission form, which can be downloaded from www.sut.org/event/sut2016. Abstracts should be submitted in English and in Microsoft Word format; please do not send PDF format abstracts. Abstract forms should be submitted by the deadline by email to sut2016@sut.org. A notice of receipt will be emailed by return. Student poster submissions should use this call process and mark submissions as "Poster"; no paper will be required. If you have any queries about your submission please contact either David Liddle, Business Development Executive david.liddle@sut.org, or Kirsty Webster, Events Manager: kirsty.webster@sut.org

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 27th November.

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

Marine Earth Observation Scientists & Developers appointments at the Plymouth Marine Laboratory

Closing Date: 27 Nov. 2015 at 12:00 GMT

Location: Plymouth, UK

Starting Salary Range: £30k - £40k

Full time - Open Ended Appointments and One-year Fixed Term Appointments

Job Purpose:

As a result of continued success in earning funding from the UK Natural Environment Research Council (NERC), the European Commission and the European Space Agency, PML has a number of open-ended and one year positions available to work within Remote Sensing, one of our fastest growing groups.

The group comprises a multi-disciplinary team of scientists with expertise in remote-sensing, physics, meteorology, engineering, computer vision and computer science.

The post-holders will undertake research and development on ocean colour projects at PML involving one or more of the following tasks:

- 1) Lead development and implementation of systems for processing and analysis of Sentinel-3 ocean and land colour imager (OLCI) data for near-real time and archived observation of ocean colour around the UK, N Atlantic and globally.
- 2) Contribute to product development and to support data requests, e.g. providing advice on use of data sets.
- 3) Analyse and publish results from the ocean colour systems.
- 4) Assist with improvement and maintenance of existing ocean colour data processing systems for NASA MODIS, NOAA VIIRS and former sensors, including organising large-scale reprocessing. Maintain necessary external codebases in our existing ocean colour data processing systems, such as NASA's SeaDAS, exploring other packages as needed.

Experience & Eligibility Requirements:

You will either have a PhD or 3+ years post-graduate experience in a numerate or scientific discipline. Ideally with experience in Earth Observation data processing and handling. You must have proven experience and skills in computer programming (e.g. C, Python, Java, IDL), preferably in a Linux environment. You will have excellent team and interpersonal skills and be able to manage time and priorities.

Apply online at: <https://advanced.advorto.com/pml/VacancyInformation.aspx?VId=18927#.VjnXSp1FBaQ>

Closing date: 1200hrs GMT on Friday 27th November 2015