

# Challenger Wave



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

## NEWS

### Marine Measurement Forum 55 a great success

The 55<sup>th</sup> Marine Measurement Forum (MMF55) was hosted by ASV Ltd in Portchester, Hampshire at the end of January 2015 and brought together 70 delegates from the ocean community. The day saw 14 presentations from a range of commercial and research organisations, all set in the ASV workshop that, for one day only, was kitted out like a conference centre complete with full size USVs



MMF55 audience with ASV vessels in the background

Following the opening address from ASV's Managing Director Dan Hook, the first session commenced with a presentation from Terry Edwards of RS Aqua talking about the advances seen in the Datawell Directional Waverider4 buoy compared to earlier models. The topic of instrumentation was continued by Nortek's Eric Siegal who discussed using an AD2CP for small vessel surveys, followed by Tom Broomfield of Teledyne Reson looking at the features of SeaBat Sonars

and finally by Stephen Andre from Alphecca who illustrated the methods taken to monitor solitons in the ocean.

After a networking coffee break, Geraint West from the National Oceanography Centre (NOC) kicked off the second session by outlining the latest in the developments at the new Marine Autonomous and Robotic Systems Innovation Centre (MARSIC) at NOC, Southampton. By facilitating the sharing of ideas, knowledge and information, it is intended that the centre will act as the driver for a coherent Maritime Autonomous Systems (MAS) strategy throughout the UK. David Todd from HR Wallingford went on to describe the organisations impressive new Fast Flow Facility which has the ability to generate waves up to 1m high and flows of over 2.6m/s.



Networking during the tasty hot lunch break

After a very well received hot lunch during which delegates took advantage of the opportunity to view the ASV vessels on display and to network extensively, the first presentation in the afternoon session focussing on research and applications saw Dr Alex Nimmo-Smith of Plymouth University talking about holographic imaging of marine sus-

pendent particles. He emphasised that this method can improve the ability to identify and characterise particles. The emerging theme of marine autonomy was continued by Russell Wynn from NOC as he shared the stories and lessons learnt from the recently completed MASSMO trial which saw the UK's largest ever deployment of marine robots as the fleet was launched off SW England back in October 2014. Other speakers in this session included Dr James Fishwick from Plymouth Marine Laboratory who talked about the work carried out on the Western Channel Observatory using a variety of platforms which can be used for sensor testing. Visiting from Canada, Greg Johnson of RBR treated the audience to a humorous and enlightening explanation of the rationale behind the design of RBR ocean sensors followed by deployment tales of the Liquid Robotics Waveglider from Stephen Auld. Elizabeth Paull from Aquatec Group provided an interesting insight into gathering coastal oceanographic data using "fishing boats of opportunity" and the development of a new temperature and depth recorder capable of delivering immediate results whilst reducing cost per data point. The final presentation of the day was delivered by Sean Newsome from Teledyne SeaBotix who showcased some real life ROV deployments including the recovery of an airplane black box and a victim.

For more information on the MMF series, visit

<http://www.mmf-uk.org>

During the proceedings of the 55th Marine Measurement Forum (MMF55) on 29th January, the MMF Steering Group announced that hosts have been signed-up for the next three events in the series. MMF56 will be held under the stewardship of the National Oceanography Centre (NOC) in Liverpool on Weds 15th July 2015 and it is anticipated that a social gathering will be organised for the preceding evening for those who elect to travel to the area the day before. Thursday 3rd March 2016 will see MMF57 organised by HR Wallingford at their impressive Oxfordshire premises. To round off the bookings, Plymouth Marine Laboratory (PML) will be hosting MMF58 on an, as yet, unspecified date during late Summer/Autumn 2016.

The Steering Group expressed its delight at securing these forward bookings which confirm the sector's enthusiasm for the MMF format combining, as it does, a series of short presentations on diverse subjects with ample opportunity for networking, all under the umbrella of low cost attendance. Further news regarding all three events will follow in due course and will also be announced on the MMF website at [www.mmf-uk.org](http://www.mmf-uk.org)

### **MSc in Applied Oceanography, Operational Oceanography and Marine Studies offered by the Physical Oceanography Unit at the University of Malta**

Two scholarships for EU and non-EU applicants respectively are available to attend a one-year full time post-graduate course in applied oceanography with a focus on operational oceanography. The course is intended to train post-graduate students and professionals on state-of-the-art methodologies and tools to measure, understand and predict the marine environment, and derive sustained benefits from the sea. It is elaborated over seven specialized study units spanning and merging the scientific, technical and applicative aspects of oceanography to offer students a wide-ranging integrated approach, linking science to management, putting technology at the service of users and stakeholders, and providing tools and training for more efficient service oriented applications. Targeted areas of such applications include: environmental monitoring and surveillance, assessment and mitigation of risks, marine science-based policy development and strategic



*A well received presentation from Dr Russell Wynn, NOC Southampton*

The day was brought to a close with a final address from Dan Hook before delegates were invited on a tour of the new ASV facility. Delegates seemed to be very impressed with the day's event which provided informative presentations, great networking opportunities and a wonderful lunch all for £36 per head.



planning, climate change, sustainable resource exploitation, ocean governance, marine industries and service provision, and the overall empowerment of human resources to face current and emerging challenges in the marine domain.

Visit [www.um.edu.mt/science/physicaloceanography/msc](http://www.um.edu.mt/science/physicaloceanography/msc) for more details on the course or write to Prof. Aldo Drago on [aldo.drago@um.edu.mt](mailto:aldo.drago@um.edu.mt)

Prospective students are encouraged to find their own funding. Paying students can apply for the course directly from [www.um.edu.mt/apply](http://www.um.edu.mt/apply)



**MASTER OF SCIENCE IN APPLIED OCEANOGRAPHY**  
Operational Oceanography and Marine Studies  
offered by the Physical Oceanography Unit at the University of Malta

**OPEN UP YOUR TALENTS TO THE OCEANS... GET GEARED TO JOIN THE QUALIFIED AND COMPETENT WORKFORCE THAT MEETS THE GROWING DEMANDS UNDERPINNING THE COMPETITIVENESS OF THE MARINE INDUSTRY AND SERVICE SECTORS... THIS IS THE RIGHT COURSE FOR YOUR AMBITIOUS FUTURE!**

The course is intended to train post-graduate students and professionals on state-of-the-art methodologies and tools to measure, understand and predict the marine environment, and derive sustained benefits from the sea. It is elaborated over seven specialized study units spanning and merging the scientific, technical and applicative aspects of oceanography to offer students a wide-ranging integrated approach, linking science to management, putting technology at the service of users and stakeholders, and providing tools and training for more efficient service oriented applications. Targeted areas of such applications include: environmental monitoring and surveillance, assessment and mitigation of risks, marine science-based policy development and strategic planning, climate change, sustainable resource exploitation, ocean governance, marine industries and service provision, and the overall empowerment of human resources to face current and emerging challenges in the marine domain.

While retaining the necessary scientific elements related to the acquisition and use of data and its transformation into knowledge, the course targets to put an emphasis on achievement of skills, and empower students to excel in performance on applications and operational practices.

The course is delivered with the participation of an international faculty including high profile experts in operational oceanography. This course is a one-year full-time course, that opens each October.

**RELATED JOB OPPORTUNITIES**

- Marine impact assessment and specialized analysis of environmental risks
- Research fields in oceanography and the marine environment
- Management of coastal/marine resources
- Marine-related industries, services and economic activities
- Policy-making and governance
- Environmental monitoring
- Marine observations and forecasting
- Data mining, management, quality control and archival

**SCHOLARSHIPS**

Scholarships are available for EU and non-EU students with high academic records relevant to the course.

**COURSE MODULES**

- Scientific Baseline of Oceanography
- Practical Baseline of Oceanography
- Essentials of Operational Oceanography
- Data Resources in Oceanography
- Boot Camp - Field survey and hands-on marine data analysis
- Principles of Ocean Governance
- Applications and Services deriving from Operational Oceanography

For more info: [www.um.edu.mt/science/poumit](http://www.um.edu.mt/science/poumit)

Register at: [www.um.edu.mt/apply](http://www.um.edu.mt/apply)

Course Coordinator: Prof. Aldo Drago

For further information: Tel: +356 21444111 Fax: +356 21444111 Email: [info@um.edu.mt](mailto:info@um.edu.mt)

## Arctic warming changes distribution of commercial fish species

In September 2013 Norwegian and Scottish scientists recorded Atlantic mackerel in Isfjorden in Svalbard for the first time. This is the northernmost record of this popular fish species and suggests a northward expansion of its distribution range.

Dr Finlo Cottier, Head of the Physics and Technology Department at Oban's Scottish Association

for Marine Science (SAMS), and co-author of the study, explains: "We think that Atlantic mackerel has expanded its summer distribution into the High Arctic because of the dramatic change in water temperatures we have been measuring over the past decade. The temperature of the water in the Arctic has been increasing in both summer and winter, reducing the summer sea ice around Svalbard and so opening up new feeding grounds for mackerel and other fish species." Mackerel is not the only fish species that has expanded its range to now include Svalbard.



The study, led by Professor Jorgen Berge of UiT The Arctic University of Norway, is published this week in the journal *Arctic* and coincides with the release of the House of Lords report *Responding to a Changing Arctic*.

The House of Lords report highlights how easier access to a less ice-covered Arctic may provide new commercialization opportunities for fisheries but calls for a moratorium on fishing until a management regime is agreed.

During spring Atlantic mackerel spawn in the North Sea and to the west of Scotland, Ireland, France, Spain and Portugal. From there they migrate northwards to feed in the Norwegian Sea before returning to their spawning areas in winter.

The House of Lords report was informed by UK scientists including SAMS' Dr Ray Leakey and identifies a continued knowledge gap regarding the Arctic ecosystem. Dr Leakey summarized: "The current knowledge gap limits our ability to manage the Arctic ecosystem sustainably. We thus welcome the report's recommendation for a substantial and coordinated long-term programme of Arctic research to ensure we have the data to make the best possible choices."

See more at: <http://www.sams.ac.uk/news-room/news-items/arctic-warming-changes-distribution-of-commercial-fish-species>

For further information or for a copy of the mackerel distribution map please contact [Anuschka.Miller@sams.ac.uk](mailto:Anuschka.Miller@sams.ac.uk)

### Challenger Conferences

For many of us the biannual Challenger Conference is an important event. The conferences have run very successfully since the 1980s and have over that time rotated around important centres for marine science in the UK. Until now the conferences have been hosted in Bangor, Southampton, UEA, Plymouth, Liverpool and various venues in Scotland. The locations and running of these conferences have always depended on willing volunteers locally and more widely in the Society, and we are grateful to all of them.

Marine Science in the UK is not confined to the centres above and the Challenger Council were therefore very pleased to receive a proposal from Newcastle University to host a future Challenger Conference. Council have accepted this offer and, having consulted relevant host institutions, taken the slightly unusual step of now scheduling not just the next Challenger Conference (Liverpool 2016) but also the following one 2018 in Newcastle and the one after that in Scotland.

This note is firstly to alert all the members to these plans, but also to invite any other institutions interested in hosting the conference to contact us. Inevitably with a biannual conference the inclusion of new venues will be a slow process, but the process is open to all. **–Tim Jickells  
President for Challenger Council**

### Doctoral Researcher Awards

ABTA announces Doctoral Researcher Awards 2015 to promote and reward academic and scientific excellence among researchers pursuing doc-

toral degrees in the UK. For more information please visit the competition website <http://www.abtanet.org.uk/Awards/Detail/8/2015-ABTA-Doctoral-Researcher-Awards>.

Please note that the application deadline is 30 March 2015 and this competition is open to all students regardless of their nationality.

## VIEWS

### Conference Session Building on the findings of IPCC AR5 (5th assessment report)

The scientific conference "Our common future under climate change", Paris, Unesco (7-10 July 2015), will present updated knowledge and address key issues concerning climate change in the broader context of global change. A session entitled "Ocean Change: Understanding and projecting the impacts of warming and acidification on natural and human systems" will be convened by Jean-Pierre Gattuso and Ove Hoegh-Guldberg.

The Ocean is critical to life on Earth through its regulation of atmospheric gases, stabilisation of planetary heat, and provision of food and resources to well over 3 billion people worldwide. Despite its importance, however, our understanding of its responses to key drivers such as ocean warming and acidification has been relatively limited. The recent consensus report from WGII of the IPCC AR5 significantly corrects this deficit by including a number of ocean-focused chapters for the first time. In doing so, AR5 has identified a plethora of fundamentally important changes that pose serious risks to components such as ecosystems, fisheries, and coastal livelihoods. This session brings together the latest IPCC consensus on the Ocean, and provides an integrated and updated perspective on the changes, risks and projections for both natural and human systems. Using information accumulated and the consensus achieved during the IPCC process, this session will also explore the implications of emission scenarios for key assets such as coral reefs, fisheries, mangroves and coastal processes. In doing so, a number of key questions will be discussed, such as: What will be the likely impacts of ocean warming and acidification on organisms, ecosystems and dependent human communities under different emission trajec-

ries? Are there significant adaptation and policy options available to the over 100 countries that have a significant dependence on ocean and coastal systems? The ensuing discussion will also facilitate the construction of key messages for the COP21 negotiation process on the Ocean and associated issues.

### **Ocean Glider Community Science Workshop 2015**

Following from the highly successful ocean glider community workshop at NOC Liverpool in 2013, we are pleased to announce the 2015 workshop at UEA in Norwich on 6th and 7th May 2015. The workshop is intended to get the community together to present and discuss the science that we can do with ocean gliders. Everyone is welcome, especially PhD students and those new to using gliders. Registration is now open at

<https://eventbrite.co.uk/event/15750766968/>

We hope to welcome you to UEA in May! - **Prof.**

**Karen Heywood**

## **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**

### **12th-17th April 2015: European Geosciences Union General Assembly**

*Vienna, Austria.*

The EGU General Assembly 2015 will bring together geoscientists from all over the world to one meeting covering all disciplines of the Earth, planetary and space sciences. The EGU aims to provide a forum where scientists, especially early career researchers, can present their work and discuss their ideas with experts in all fields of geoscience. The EGU is looking forward to cordially welcoming you in Vienna !

[www.challenger-society.org.uk/](http://www.challenger-society.org.uk/)

### **14th-16th April 2015: Ocean Business**

*NOC Southampton, UK.*

As one of the unmissable events in the ocean technology calendar, Ocean Business 2015 is delighted to announce that registration is now open. This coincides with the recent news that over 300 exhibition stands have sold; offering the greatest mix of technology, business and training yet. Ocean Business offers the visitor more than just an international exhibition. The show has an outstanding reputation for its training and demonstration programme, which runs alongside the exhibition. Visitors can actually test drive equipment at sea, in the dockside, in a test tank and in classrooms. Ocean Business also offers Offshore Survey, a technical conference and Ocean Careers, an interactive careers event – visitors are simply spoilt for choice. If that's not enough, Ocean Business is well known for organising some very special social events, and 2015 will be no exception - <http://www.oceanbusiness.com>

### **15th-17th June 2015: ESSAS Symposium**

*University of Washington, Seattle.*

This is a call for abstracts and registration for the ESSAS (Ecosystem Studies of Sub-Arctic Seas) Symposium on the Role of Ice in the Sea that will be held at the University of Washington in Seattle, WA, USA from 15 - 17 June 2015.

The session themes are:

- \* Humans, Ice and the Sea in the Subarctic and Arctic Past
- \* The Role of Sea Ice in the Arctic and Subarctic
- \* Ecological Roles of Glaciers in the Sea
- \* Socio-economics of Management for Resilience
- \* Open paper session

The number of participants will be limited to 125, so you are encouraged to register soon. To register and submit an abstract, please go to: <https://www.imr.no/conferences/ESSAS/>

More information on the symposium and logistical arrangements is available at: [http://www.imr.no/essas/2015\\_essas\\_annual\\_science\\_meeting/en](http://www.imr.no/essas/2015_essas_annual_science_meeting/en)

### **7th-10th July 2015: 'Our common future under climate change' conference**

*UNESCO, Paris, France*

This scientific conference will present updated knowledge and address key issues concerning



climate change in the broader context of global change. <http://www.commonfuture-paris2015.org/>

### 10th July 2015: 5<sup>th</sup> UK Algae Conference Glasgow, UK

The Systems, Power and Energy Research Division at the University of Glasgow will host the 5<sup>th</sup> UK Algae Conference. This has proven to be a successful event in the past, with a turnout of over 130 academic and industrial delegates, including leading scientists and multinational R&D companies from algae and renewable energy research fields, attending the last conference held by Cranfield University, June 2014. I would like to extend an invitation to you to attend this free event, it is a great opportunity to network with your peers as well as leading academic scientists. Discover and share pioneering algae research, from applications in wastewater bioremediation, biofuel development, photobioreactor design and technology, synthetic engineering, photosynthesis and lipid research and more.

We would greatly value your involvement at this event and would like to ask if you are able to sponsor this event to help raise the event profile, build on the success of previous years and to keep the event free for attendees. We plan to have space available where you can exhibit.

The event registration webpage will open shortly, we shall update you with news on the schedule and speakers over the next few weeks. If you are interested in sponsoring this event, to see how this can benefit your company, please get in touch as soon as possible.

Email: [j.mcmillan.1@research.gla.ac.uk](mailto:j.mcmillan.1@research.gla.ac.uk)

Email: [eng-ukalgaconference5@glasgow.ac.uk](mailto:eng-ukalgaconference5@glasgow.ac.uk)

### 31st August-4th September 2015: Hjort Summer School

Bergen, Norway

The theme of this summer school is Fishing and physics as drivers of marine ecosystem dynamics. Deadline for applications: 1 May 2015.

<http://www.hjortcentre.no/en/projects/hjort-centre/events/hjort-summer-school/hjort-summer-school-2015--fishing-and-physics-as-drivers-of-marine-ecosystem-dynamics>

### 14th-18th September 2015: 3<sup>rd</sup> CLIOTOP Symposium

San Sebastian, Spain.



#### Objectives

- Evaluate impacts of climate variability and change over seasonal to decadal time scales on pelagic species and dependent socio-economic and management systems.
- Identify risk assessment and evaluation tools that incorporate climate variability in order to improve sustainable resource management (conservation, fisheries, spatial planning, etc.).
- Identify sustainable pathways for coupled socio-ecological oceanic systems.
- Position CLIOTOP-science for the next 10 year phase as part of Future Earth, and build a collaborating community of scientists, managers, and policy-makers.



#### Themes

1. Early life history of pelagic species – winners and losers in the future ocean.
2. Implications of potential distribution shifts in oceanic organisms for food security and species conservation.
3. Trophic pathways in open ocean ecosystems – changes in mid-trophic level community composition as a result of changes to physical, chemical and biological components of the marine environment.
4. Integrated modeling to project and explore future patterns, including evaluation of model complexity vs generality, evidence of important processes to include in models, and evaluation of model results.
5. Socio-economic aspects and management strategies – what are the key needs and resulting decisions and actions that should guide oceanic resource management under climate change.
6. Influence and role of biophysical and biogeochemical processes and feedbacks on top predators.
7. Biodiversity, conservation and adaptive management – future strategies for incorporating long term change.
8. Scenarios of large marine organisms and their fisheries in changing marine ecosystems.

In all themes, submissions that take a comparative approach across taxa, regions, or temporal periods are encouraged.

The general objective of CLIOTOP is to organise a large-scale worldwide comparative effort aimed at elucidating the key processes involved in the impact of both climate variability (at various scales) and fishing on the structure and function of open ocean pelagic ecosystems and their top predator species. The ultimate objective is the development of a reliable predictive capability for the dynamics of top predator populations and oceanic ecosystems that combines both fishing and climate (i.e. environmental) effects.

#### Organizing committee

Alistair Hobday (Australia)  
Haritz Arizabala (Spain)  
Kevin Weng (USA)  
Karen Evans (Australia)  
Joel Ulopiz (USA)  
Lisa Maddison (Norway)  
Dan Costa (USA)  
Elliot Hazen (USA)

#### Scientific committee

Kevin Weng (USA)  
Alistair Hobday (Australia)  
Gorka Merino (Spain)  
Maria Gasalla (Brazil)  
Bob Cowen (USA)  
Patrick Lehodey (France)  
Osamu Abe (Japan)  
Olivier Maury (France)

<http://www.imber.info/index.php/Science/Regional-Programmes/CLIOTOP>



### 27th-30th October 2015:IMBER IMBIZO IV - Marine and human systems: Addressing multiple scales and multiple stressors

Trieste, Italy

IMBER will hold the fourth in its IMBIZO\* series at the Istituto Nazionale di Oceanografia and Geofisica Sperimentale (OGS) in Trieste, Italy. (\* Zulu word for "a gathering").

IMBIZO IV will be bigger and better! The proven format of concurrent and interacting workshops, with joint plenary and poster sessions will be followed, but IMBIZO IV will have four, instead of the usual three workshops.

This format has been shown to provide an excellent forum for stimulating discussion between interdisciplinary experts, and encourage the linkage between biogeochemistry, ecosystem and social science research. To optimize participant interactions, the size of the workshops will be restricted to 40 participants per workshop.

The themes of the four concurrent workshops are:

1. Marine ecosystem-based governance: From rhetoric to reality
  2. Coastal upwelling ecosystems as models for interdisciplinary studies of climate and global change
  3. Integrated modelling to support assessment and management of marine social-ecological systems in the face of global change
  4. From regime shifts to novel systems - evaluating the social-ecological implications of lasting ecosystem changes for resource management
- Each workshop will prepare a white paper or a special journal issue containing synthesis and primary research papers resulting from the workshop contributions and discussions.

Bonus workshops on 26 October 2015!

On the day before the start of IMBIZO IV, several interactive sessions, including scientific writing and publishing, and data management will be organised. For further information about IMBIZO IV and detailed descriptions of the workshops, visit the IMBER web site <http://www.imber.info/index.php/Meetings/IMBIZO/IMBIZO-IV> or contact us at [imber@imr.no](mailto:imber@imr.no)

**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](mailto:info@maritimeindustries.org)

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CSMS email addresses are president, admin, membership, secretary and [treasurer@challenger-society.org.uk](mailto:treasurer@challenger-society.org.uk). Contributions for next month's edition of Challenger Wave should be sent to: [john@vectisenvironmental.com](mailto:john@vectisenvironmental.com) by the 31<sup>st</sup> March.

*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](mailto:jxj@noc.ac.uk) as soon as possible*

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# JOBS

## Workshop Technician

The Engineering Group at Marine Scotland Science, Marine Laboratory in Aberdeen is seeking to recruit a fixed term appointment (FTA) to provide workshop support for its sea-going Engineering staff throughout 2015. The post requires specific electrical or electronic engineering skills, including the ability to solder, cable-handling, circuit board fault finding and circuit analysis. The technician would also assist in the preparation of equipment, systems and cables for use on Renewables and Inshore Fisheries scientific surveys.

The post would start in April 2015 for a minimum of 6 months, though this may extend to 11 months (depending on results and outcomes from intervening surveys). The pay scale would be Civil Service Grade A4 (£20,130)

Interested parties should contact :-

Chris Hall 01224 295492 / [chris.hall@scotland.gsi.gov.uk](mailto:chris.hall@scotland.gsi.gov.uk)

Neil Collie 01224 295592 / [neil.collie@scotland.gsi.gov.uk](mailto:neil.collie@scotland.gsi.gov.uk)

## POGO-SCOR Visiting Fellowships

### About the fellowship programme

This programme is jointly funded by POGO and the Scientific Committee on Oceanic Research (SCOR) and is designed to promote training and capacity building leading towards a global observation scheme for the oceans. The Programme has been a success for over ten years, with over 150 fellowships awarded since 2001.

The fellowship program is open to scientists, technicians, graduate students (PhD) and post-doctoral fellows involved in oceanographic work at centres in developing countries and countries with economies in transition. Its main purpose is to advance sustained ocean observations and their applications. Priority is given to applicants in early stages of career development. The fellowship is not intended for pure, "blue skies" research; it offers the opportunity to visit other oceanographic centres for a short period (1 to 3 months) for training on any aspect of oceanographic observations, analyses, and interpretation.

The Selection Criteria involve a number of factors including:

- Quality of the application;

- Relevance of the application to the priority areas identified in the Fellowship Announcement (Argo Floats; Fixed-Point Time-Series Observations; Large-scale, Operational Biological Observations including Biodiversity; Emerging Technologies for Ocean Observations; Data management; Coastal observations/ Coastal Zone Management; Ocean and coastal modelling; oxygen and other biogeochemical sensors on floats and gliders; time series measurements of N<sub>2</sub>O and CH<sub>4</sub>)

- Evidence that the training will lead to capacity-building with potential lasting impact on regional observations; and,

- The need to maximise regional distribution of the awards.

### Application

Applications for 2015 are open for submission. The deadline for the applications is 31st March 2015



Additional information about the fellowship and application instructions, as well as Frequently Asked Questions can be downloaded from <http://www.ocean-partners.org/pogo-scor-fellowship>



MINISTERIO  
DE ECONOMÍA  
Y COMPETITIVIDAD



INSTITUT MEDITERRANI  
D'ESTUDIS AVANÇATS

## VACANCY NOTICE IMEDEA(CSIC-UIB) · Mallorca

**TYPE OF CONTRACT: TEMPORAL CONTRACT**  
**PUBLISHING DATE: 12 FEBRUARY 2015**

The Mediterranean Institute for Advances Studies (IMEDEA, [www.imedeia.uib-csic.es](http://www.imedeia.uib-csic.es)), a joint research center between the Consejo Superior de Investigaciones Científicas (CSIC) and the University of the Balearic Islands (UIB), offers a contract in physical oceanography (at pre- or post-doctoral level). The applicant will join the Marine Technology and Operational Oceanography Department (TMOOS), a team with experts in physical oceanography, remote sensing and in situ data analysis. The candidate will benefit from a stimulating research environment, including external collaborations and in close cooperation with the research engineers at the Balearic Islands Coastal Observing and Forecasting System (SOCIB, [www.socib.es](http://www.socib.es)).

The selected candidate will work in the frame of E-AIMS project (<http://www.euro-argo.eu/EU-Projects-Contribution/E-AIMS>) funded by the European Commission (FP7). In particular, the research will mainly focus on: 1) Comparison and synergy between satellite altimetry and Argo data and 2) Impact study of the Argo array definition based on satellite altimeter fields. The area of study will be the Mediterranean Sea.

We are seeking a motivated individual with a higher degree in Physics, Engineering, Marine Science or equivalent and ideally with a background in Physical Oceanography (e.g. a PhD in a related field). Skills in computer science and data analysis are desirable. Experience with satellite altimetry and Argo data will be positively evaluated.

The applicant's ability and willingness to work in a group will be taken into account, as well as his/her communication skills. Knowledge of the English language is required for this position. The successful candidate will be involved in the publication of scientific reports and articles, and will present his/her work at international conferences and project meetings.

The position is initially available until the end of the project (31 December 2015) with a possible extension in the frame of new funded projects. The contract will start as soon as possible, with a gross salary between 30.000 and 35.000 Euros/year depending on previous experience (pre- or post-doctoral level). Candidates interested in this project should send (via email) their application including academic CV and the names and contact information of two references to:

Dr. Ananda Pascual  
IMEDEA(CSIC-UIB)  
C/ Miquel Marqués 21  
07190-Esporles, Mallorca (Spain)  
Phone: +34 971611732  
Email : [ananda.pascual@imedeia.uib-csic.es](mailto:ananda.pascual@imedeia.uib-csic.es)



NAFC Marine Centre  
University of the  
Highlands and Islands

### **Research Associate**

We have a vacancy for a full time, 2 year fixed term Research Associate at the NAFC Marine Centre in Shetland, working 50% within the EPSRC project, MacroBioCrude, and 50% in our Marine Spatial Planning section.

This is an exciting opportunity to add new, topical skills and techniques to your research portfolio by being actively involved in two varied and rapidly expanding research areas.

You will collaborate with other members of the MacroBioCrude project consortium by providing pure and mixed populations of seaweed for ensiling and by supporting seaweed ensilage trials. You will also help assess supply chain relationships, public perceptions and overall seaweed to biofuel process footprint (carbon, energy, water).

At the same time, you will further develop the work of the Shetland Islands' Marine Spatial Plan by enhancing the understanding of the spatial variation in cultural, social and economic uses of the marine environment, and the values attached to each by local stakeholders.

The commencing salary will be £25,014 - £27,317 per annum, dependent upon relevant qualifications and experience.

Applicants should have an MSc in a relevant science subject plus post-graduate research experience and exhibit good interpersonal and communication skills. A proven publication record is desirable and experience in agricultural ensiling and/or assessing and presenting data in a spatial format would be beneficial, though not essential, as full training will be given.

A full job description, person specification and further project details can be viewed at [www.nafc.ac.uk/jobs.aspx](http://www.nafc.ac.uk/jobs.aspx)

For an informal discussion on this post, please contact: Dr. Lesley McEvoy ([lesley.mcevoy@uhi.ac.uk](mailto:lesley.mcevoy@uhi.ac.uk)) or Rachel Shucksmith ([rachel.shucksmith@uhi.ac.uk](mailto:rachel.shucksmith@uhi.ac.uk)).

For an application pack, please contact NAFC Reception as below.

CLOSING DATE: 5.00PM ON MONDAY 23rd MARCH 2015

The NAFC Marine Centre is an academic partner of the University of the Highlands and Islands.

The NAFC Marine Centre is committed to achieving equality of opportunity in all aspects of its work and study and therefore operates an Equal Opportunities Policy.

Port Arthur, Scalloway, Shetland, ZE1 0UN, Scotland, UK  
Tel: +44 (0)1595 772000 Fax: +44 (0)1595 772001  
Email: [recruitment@nafc.uhi.ac.uk](mailto:recruitment@nafc.uhi.ac.uk) Web: [www.nafc.uhi.ac.uk](http://www.nafc.uhi.ac.uk)

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