

2. A short curriculum vitae of the nominee is required.
3. The nomination should be submitted by a single proposer with support by one or preferably two others.
4. Nominations should be submitted to the President of The Society t.jickells@uea.ac.uk (from whom advice may also be sought) before April 1st.
5. Nominees should be members of the Society.
6. Nominations and applications will be considered by the Council of the Challenger Society.
7. Current Council members of the Society are ineligible for any award or prize.

Challenger Conference abstract submission is open !!!

The 17th Biennial Conference of the Challenger Society for Marine Science takes place in Liverpool on the 5th to 8th September 2016. On behalf of the conference organising committee, you are invited to submit an abstract for inclusion in the conference programme. Please follow the link below for a full list of available sessions and links to further conference information:

<https://www.liverpool.ac.uk/challenger-conference-2016/abstract-submission>

The deadline for abstract submission is May 12th 2016. Registration will open at the beginning of March 2016. We look forward to seeing you in Liverpool in September. - **Dr Matthew Palmer, Challenger Conference 2016: Organising committee chair**

Presidents' Photographic Prize

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

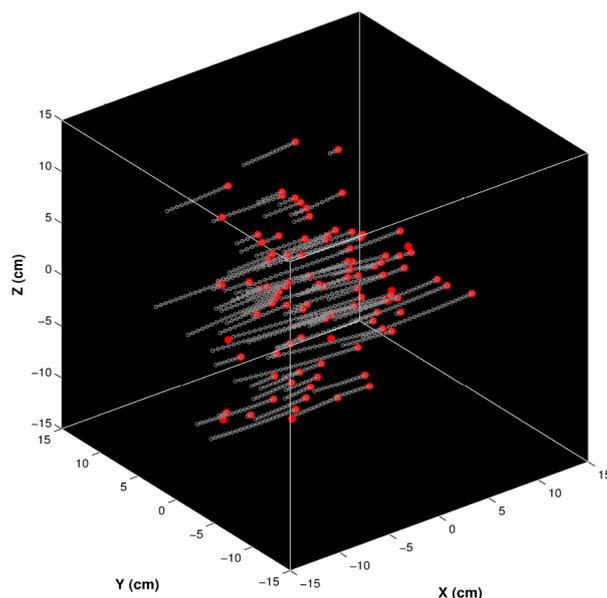
This title is deliberately designed to be broad ranging and allow you all to bring your creativity to bear to impress your friends and colleagues. There will be fabulous prizes for the best pictures (judged by the President and President Elect) and we anticipate using them in future publications of the society, with the artist's permission of course.

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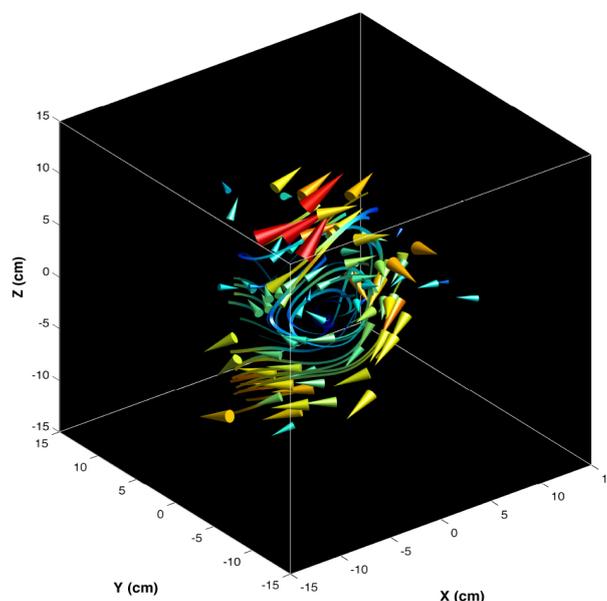
So please start planning to bring your best photographs to Liverpool. Details of how to submit pictures will be posted on the conference website nearer the time. - **Tim Jickells and Rachel Mills, President and President Elect**

Digital "Pooh Sticks" reveals structural building blocks of ocean turbulence

A team of scientists from Plymouth University's Marine Institute, the Met Office and Hamburg University, have used an approach analogous to a high-tech version of Pooh Sticks (the game immortalised by A. A. Milne in the Whinnie-The-Pooh stories) to reveal the three-dimensional structure of ocean turbulence.



(a) Instantaneous particle distribution



(b) Instantaneous velocity distribution

To make the measurements, Drs Edward Steele, Alex Nimmo-Smith and Andrey Vlasenko used a Three-Dimensional Submersible Particle Tracking Velocimetry (3D-PTV) system consisting of multiple synchronous cameras that view a 20 x 20 x 20 cm³ sample volume from different angles. Small naturally-occurring suspended particles (plankton and sediment flocs) were located and tracked in three dimensions, allowing the full velocity field to be determined. The results show the energy-containing turbulence in the bottom boundary layer of the coastal ocean comprises coherent "packets" (groups) of hairpin-shaped vortices, directly in line with predictions based on laboratory measurements and numerical modelling. This demonstrates a direct linkage from low Reynolds number experiments to higher Reynolds number permitting fine-scale details of particle transport and pollutant dispersion to be inferred from lower Reynolds number data. The paper, published in *Geophysical Review Letters*, is available via the link <http://www.dx.doi.org/10.1002/2015GL067148>.

SCOR working groups

The 2016 call for SCOR working group proposals has been launched. The deadline for submission of proposals is 17 April 2016. Updated instructions for proposals are available at http://www.scor-int.org/WG_Proposal_Instructions.docx - **Gideon Henderson, Chairman UK-SCOR**

Future of the Seas and Oceans: IUGG response to the G7 Science Ministers proposal

At the G7 Meeting of the Science Ministers in Berlin, Germany, on 8-9 October 2015, the Ministers resolved to take action to further develop a global knowledge society. In their final communiqué they stated that they commit to continuing discussions and developing a proposal for how we can most effectively enhance international cooperation among the G7 and other interested countries ahead of the next Science Ministers meeting in Japan 15-17 May 2016. Recognizing that science plays a pivotal role in providing solutions to today's environmental and health issues the Ministers wish to engage in closer cooperation with the international scientific community on four topics, one being the Future of the Seas and Oceans.

To this end, the IUGG Secretary General Alik Ismail-Zadeh requested the International Association for the Physical Sciences of the Oceans (IAPSO) to consider this important topic. The

IAPSO President Denise Smythe-Wright took an initiative, together with the Scientific Committee on Oceanic Research (SCOR) of the International Council for Science (ICSU), to set up an ad-hoc working group of experts with the intention to develop a white paper related to the topics highlighted in the G7 final communiqué. The topics are marine litter, ocean acidification, biodiversity loss, de-oxygenation, warming, degradation of marine ecosystems, and environmental impacts of deep sea mining. The synthesis paper will be accompanied by a summary for policymakers to be submitted to the G7 Science Ministers before their next summit in May 2016.

IEWS

IMBER ClimEco5 Summer School

Apply now to attend the IMBER ClimEco5 Summer School: Towards more resilient oceans: Predicting and projecting future changes in the ocean and their impacts on human societies, as only 60 participants will be selected to attend. This exciting, multidisciplinary training course is about climate change and marine ecosystems, including societal impacts and responses.

ClimEco5 will bring together a diverse group of students and early career scientists (up to ten years post PhD graduation) with natural and social science backgrounds. If you are interested in modelling and interpreting change in marine systems and finding out about practical ways of dealing with the challenges arising from working across social and natural science disciplines, then this is the summer school for you!

Lectures will include information about indicators, models, analysis, and communicating scientific findings and information that is practically useful for management. There will be practical sessions where you will be able to work with different modelling and statistical techniques and packages, and also learn tips and strategies to engage more effectively with policy and decision-makers.

The summer school will be held in Natal, Brazil from 10-17 August 2016. Please go to <http://www.imber.info/index.php/Early-Career/IMBER-Summer-Schools/ClimEco5-August-2016-Natal-Brazil> for details of the programme and lecturers, and to download the ap-

plication form. The application deadline is 31 March 2016. Best wishes - **IMBER IPO**

AMBIO conference success in Oxford

The University of Oxford opened its doors to the “Advances in Marine Biogeochemistry” (or AMBIO) Conference at the start of 2016. AMBIO is a specialist and biennial gathering of The Challenger Society for Marine Science, where delegates focus discussion on the advancing trends in marine biogeochemical research. It attracted more than 70 visitors to Oxford from the UK and overseas (Germany, Austria, Malaysia), over 3 days, to kick start the New Year.

“AMBIO has attracted record numbers in 2016, and it has proved to be a hugely popular event for our members” said Dr Gary Fones, who fronted the event, and Chairs the CSMS Special Interest Group, the Marine Biogeochemistry Forum (MBF).

Tim Jickells, Challenger Society President, agreed: “AMBIO has been a great success and timed well within large research programmes like GEOTRACES and Shelf Seas Biogeochemistry, which have lots of exciting new information to share”.

Each day was focused around a series of seminars, with regular breakouts for poster presentations and in-depth discussion held in the Department’s enclosed rooftop overlooking the iconic spires of Oxford’s skyline. Our Keynote speakers, Prof. Mark Moore (University of Southampton), Dr. Simon Ussher (Plymouth university) and Dr. Kate Hendry (University of Bristol) all shared compelling broad and deep thinking, amid the advances and challenges of their fields. Added to which, Prof. Richard Lampitt indulged us further, with an historical perspective of oceanography from the documentary video archives of the late 1970’s.

As convenor for this event, you soon appreciate that the quality of the programme really depends on who shows up. So we were delighted to get sponsorship from Planet Ocean Ltd and the Challenger Society early on, to invite speakers and subsidise student fees. This helped us build a programme that reflected the great majority of outstanding active student and early career scientists in our field, including an intrinsic balance of gender across talks and prizes.



Ms Claudia Fry and Dr Jennifer Clarke in discussion at AMBIO conference, 2016

The event concluded with a networking lunch, aimed at improving the retention of this diversity within the research student body through academic career paths in marine science. A discussion, led by the Challenger Society President Prof. Tim Jickells and President Elect Prof. Rachel Mills, was well-attended by AMBIO participants across a variety of UK institutes. An outcome of this meeting will be for the Challenger Society to establish a framework for knowledge exchange and mentoring across participant institutes that will help its members develop equitable opportunities for marine scientific research careers in the UK, and co-convenor, Miss Emma Cavan, has stepped forward to spearhead this initiative.

Department Head, Prof. Gideon Henderson, who also sits on Council for the Challenger Society added: “AMBIO has been excellent this year, thanks to the energy of all its participants. It is fantastic that we could serve as hosts for this meeting and cement Oxford’s partnerships with the UK marine science community.”

AMBIO VII Prizes were awarded as follows:

Early Career Researcher Presentation Award:

Mark Hopwood, GEOMAR, Germany

“Three flaws in our perception of glaciers as nutrient sources to marine ecosystems”

Student Oral Presentation Award:

Anna Belcher, University of Southampton, UK

“The relative roles of particle associated microbes and zooplankton on POC remineralisation in the upper mesopelagic of the Scotia Sea, Antarctica”

Student Poster Presentation Award:

Yet-Yee Yin, University of Malaysia, Terengganu, Malaysia / University of East Anglia,
"Seasonal and spatial distributions of nutrient and dissolved oxygen in Brunei Bay, southern South China Sea"

Gary Fones wrapped up the 3-day meeting in the best way possible - with a plan in place for the next one! Dr. Kirsty Crocket and Dr Natalie Hick's (Scottish Association for Marine Science) will convene AMBIO VIII in the stunning setting of Oban, September 2017. It's already certain to be a great event, and I cannot wait to revisit the camaraderie of our MBF community in Scotland. - **Will Homoky**

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

7th-9th March 2016: The Annual Science Meeting of the Ecosystem Studies of Subarctic and Arctic Seas (ESSAS)

Yokohama, Japan

The title of the meeting is **Scientific Challenges in a Changing Arctic and Subarctic**. The various sessions cover paleo-ecology, biogeochemistry, physical oceanography, biological oceanography, fisheries and human dimensions. Details on the various sessions of the meeting as well as logistics can be found at <http://www.arc.hokudai.ac.jp/en/essas2016/>. We hope to see a number of you in Yokohama.

13th-15th April 2016: Workshop on "High-resolution ocean modelling for coupled seamless predictions"

Exeter, UK

The scope of this workshop, to be held at the UK Meteorological Office, is to look at the scientific development of ocean models and global coupled

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prediction systems at resolutions of order $1/12^\circ$ for seasonal to decadal prediction and short-range weather forecasting and to:

- Identify expected improvements to processes and performance
- Clarify the key choices for ocean model configurations and parameterisations
- Discuss the development of coherent designs and collaborations for experiments and diagnostics

This is an International workshop supported by GOV and the GOV CP-TT (Coupled Prediction Task Team). For more detailed information about the workshop, agenda, sessions and local information please visit the workshop website: <https://www.godae-oceanview.org/outreach/meetings-workshops/external-meetings-supported-by-gov/international-coupled-seamless-prediction-meeting/local-information/>.

5th-6th May 2016: Marine Technology and Data Symposium

Glasgow, UK



Marine Technology and Data Symposium

WHEN: Thursday, May 5th and Friday, May 6th 2016

WHERE: Novotel Glasgow Centre, 181 Pitt Street, G2 4DT, Glasgow



The **MASTS Technology, Platforms and Sensors Forum** invites you to attend a **free 2-day symposium** for engineers, designers, developers, students, data analysts and users from the research and industry communities.

What is it about?

- Present your work or needs
- Network and identify common challenges
- Share and develop project ideas
- Hear from individuals and groups you may not be aware of

Format: 5 min presentation + 3 min Q&A
 plenty of time for networking
 Student prize

Registration: please register your attendance only or submit one or more presentation titles plus keywords

Deadline: 18:00 GMT on March 25th 2016

For questions contact: MASTS (masts@st-andrews.ac.uk)

For registration please use this link at www.eventbrite.co.uk



Marine Alliance for
 Science and Technology for Scotland
 a marine partnership for Scotland

**23rd-27th May 2016: 48th Liège Colloquium
“Submesoscale Processes: Mechanisms, Implications And New Frontiers”**

Liège, Belgium

A rich tapestry of oceanic processes is manifest at scales $O(0.1-10\text{ km})$, small enough for the constraints of the earth's rotation and oceanic stratification to be overcome, but larger than that of three-dimensional turbulence. Rossby and Richardson numbers of $O(1)$ lead to a range of dynamical instabilities that respond to surface forcing and boundary stresses, and interact with the mesoscale flow field, upper ocean turbulence, and near-inertial waves.

These dynamics result in enhanced vertical velocities and mixing, as well as stratification, on time scales that range from a few days to the inertial period and intersect with the time scales of internal waves and tides. Their diagnosis is facilitated through advances in high-resolution autonomous, in-situ and remotely sensed observations, modeling, and theoretical advances. Their implications are wide-ranging and include the transfer of energy across scales, lateral mixing and transport, restructuring of the upper ocean's density and stratification, modulation of air-sea, ice-ocean, ocean-bathymetric interactions, the exchange of biogeochemical properties across the mixed layer base, vertical supply of nutrients for primary production, modulation of light exposure and growth rates for phytoplankton, subduction of surface water, and export of particulate organic carbon and oxygen from the surface mixed layer.

The similarity of physical and biological time scales of phytoplankton growth heightens the relevance of submesoscale processes for the production and export of phytoplankton, and the structuring and diversity of oceanic ecosystems.

This colloquium aims to advance our collective understanding of submesoscale processes, their mechanistic functioning, relevance, and implications across a range of oceanic disciplines. Discussions will include observational, modeling and theoretical approaches for elucidating submesoscale phenomena.

From this colloquium, its oral/poster presentations and scientific interactions, will emerge new cross-cutting themes for future research. For more information, please visit: <http://modb.oce.ulg.ac.be/colloquium/>

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

Hong Kong, China

The 1st Gordon Research Conference (GRC) on Ocean Biogeochemistry will be held at the 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: 17th Biennial Challenger Society Conference: Oceans and Climate

Liverpool, UK

First announcement and call for sessions

<http://www.liv.ac.uk/challenger-conference-2016/>

We are pleased to announce the next biennial Challenger Society for Marine Science conference will be held in Liverpool in September 2016.

The call for abstracts under the successful session programme will be announced in February

2016. Where significant overlap exists between proposed sessions the committee will approach conveners to arrange joint or amalgamated sessions. The conference will provide space for up to 24 sessions, including oral presentations and dedicated poster sessions with multimedia capability over 3 days.

Space and funding is also available to support special interest groups (SIGs), large project meetings and education/outreach events, with free facilities offered on Monday 5th and Friday 9th September. Please submit proposed events of this type using the same format as for scientific sessions with the subject prefix "SIG:".

Further enquiries can be made via csms_enquiry@noc.ac.uk. We look forward to seeing you in Liverpool next September, - **Dr Matthew R. Palmer**

On behalf of the conference local organising committee.

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.

This message is a call for papers to the 41st CIESM Congress which will take place in mid-September in Kiel, on the Baltic shore, at the kind invitation of the German Government. You are invited to submit online, **between 8 January and 10 March**, one brief illustrated paper- two max.

Our Meeting, one of the largest multi-disciplinary forums 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,

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with details on the many Congress themes (your submitted paper must align with at least one of them), on Congress fees, on instructions to authors, etc. From there you will be able to register and submit your paper online.



NB. In the past, a number of authors took advantage of our reviewing work on their papers, but forgot (and ultimately neglected) to acquit their registration fee. For the sake of efficiency, a new procedure is now in place: each author will be able to submit her/his draft paper only after her/his individual registration fee has been paid on our web interface (this takes just a few seconds). No group registration will be allowed.

Please note that you will benefit of a special (-40%) discount if you register **before 20 February**, with the option to finalize and submit your paper later, provided that you meet our final deadline: no paper submission will be possible after 10 March. We look forward to see many of you in Kiel next September. 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.

March 2016

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 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.

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.

The deadline for abstract submissions is 9 May 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

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

Marine Biogeochemistry Special
Interest Group of the Challenger Society

at SAMS in Oban



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

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 31st 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 as soon as possible

JOBS

Lecturer in Physics at UEA

REF: ATR1297

Faculty of Science

£40,082 to £46,414 per annum.

In 2017 the Science Faculty will launch a Physics degree with a range of subjects that will make the course unique in the region and in the UK. The combination of strengths in chemical, environmental and computational physics at UEA will introduce a multidisciplinary modern degree that will meet the needs of graduates in today's society.

This is an exciting time to be joining UEA in this new faculty appointment. While initially focussed on assisting with the development of the new course, the successful candidate will aspire to develop an independent research group. Current research interests in physics across the Faculty range from theoretical physics to environmental physics, including meteorology and oceanography alongside ultrafast spectroscopy, optics and computational physics. Candidates from any of these areas or others are invited to apply.

Candidates should have a PhD (or equivalent qualification) in Physics or other relevant discipline, evidence of successful research activity in the field of Physics, an active interest and potential to grow and attain a senior position, and will be able to meet all the essential criteria set out in the Person Specification. The post is available on a full time, indefinite basis from 1 July 2016. We particularly welcome applications from suitably qualified female academics as they are currently under-represented across the Faculty.

Closing date: 12.00 noon on Friday 18 March 2016.

More details at: https://www.uea.ac.uk/hr/vacancies/academic/-/asset_publisher/h0n2rDvu3ug8/content/lecturer-in-physics