



# SCOR Annual Meeting 2018

3<sup>rd</sup> – 7<sup>th</sup> September  
University of Plymouth



UNIVERSITY OF  
PLYMOUTH



Est. 1884  
Incorporated by  
Royal Charter 2013

**PML**

Plymouth Marine  
Laboratory

The International Council for Science (ICSU) formed the Special Committee on Oceanic Research (SCOR) in 1957 to help address interdisciplinary science questions related to the ocean. SCOR was the first interdisciplinary body formed by ICSU. SCOR's name was later changed to "Scientific Committee on Oceanic Research" to reflect its more permanent status.

SCOR is an international non-governmental non-profit organization. The SCOR Secretariat is hosted at the University of Delaware (USA) and SCOR is incorporated in the State of Maryland as a 501(3)(c) organization.

SCOR activities focus on promoting international cooperation in planning and conducting oceanographic research, and solving methodological and conceptual problems that hinder research. SCOR covers all areas of ocean science and cooperates with other organizations with common interests to conduct many SCOR activities.

SCOR also conducts several different activities to build the capacity for ocean science in developing countries and every SCOR activity includes members from developing countries.

Scientists from thirty-two nations have formed national SCOR committees as a foundation for international SCOR. Approximately 250 scientists from 38 countries currently participate in SCOR activities.



## **CONFERENCE HANDBOOK**

**04 WELCOME TO PLYMOUTH**

**05 WELCOME TO THE SCOR ANNUAL MEETING 2018**

**06 DELEGATE INFORMATION**

**09 SOCIAL PROGRAMME**

**11 PLYMOUTH: BRITAIN'S OCEAN CITY MAP**

**12 DIRECTIONS TO THE MARINE STATION**

**13 WALKING ROUTE FROM THE BARBICAN TO THE MARINE STATION**

**14 WIDER PLYMOUTH MAP**

**15 OVERVIEW PROGRAMME**

**18 POSTERS**

# **CONTENTS**

# WELCOME TO PLYMOUTH



With a rich marine and maritime heritage and a hand in some of Britain's most famous events, a city as steeped in history as Plymouth has many stories to tell.

It is Britain's Ocean City, a lively and authentic waterfront community with a distinctly European feel created by the many marinas, restaurants, alfresco pavement cafes and waterfront bars, historic buildings.

Nestling between the sea and rivers on three sides, the dramatic wild expanse of Dartmoor on the fourth, and a heritage that holds a powerful place in English and world maritime history.

A city with the sea at its heart, the major shopping centre is just a ten minute walk from the waterfront.

Take a walk along the cobbled streets of the Barbican and find yourself transported back in time, to history altering moments such as Sir Francis Drake victory over the Spanish Armada, the departure of the Mayflower carrying the Pilgrim Fathers in search of the New World, and explorers Scott of the Antarctic, Captain James Cook and Charles Darwin setting sail – all of which took place right here in Plymouth.

Plymouth has a strong bond with the armed forces and its naval history runs deep. There is no better example of that than the Royal William Yard, an impressive and imposing example of the city's military prowess and the largest collection of listed naval buildings in Europe.

In addition to its impressive natural setting, Plymouth is the cultural capital of Devon and Cornwall with major events including the annual British Firework Championships and Flavour Fest, theatres, galleries and performing arts providing an eclectic cultural experience to add to the laid-back lifestyle.

With real character and personality and a scale which makes it really easy to get around, you can totally immerse yourself in Britain's Ocean City.

# Welcome to the SCOR Annual Meeting 2018

## Dear SCOR Delegate

Welcome to Plymouth – Britain’s Ocean City! Home to over a quarter of million people, the ocean is hugely important to our city. Our interaction with the ocean goes back many centuries to the genesis of a navigation school that might have even taught the Pilgrim Fathers who sailed on the Mayflower in 1620. If they had got it wrong, who would have discovered what is now the USA? Today, the School of Navigation features as part of the very broad range of marine activities at the University of Plymouth (UoP) that includes research as well as teaching.

In 1884, the Marine Biological Association of the UK (MBA) was established and today “promotes marine scientific excellence and representing the marine biological community”. The MBA has fostered the research of some 12 Nobel Laureates. The Sir Alister Hardy Foundation for Ocean Science, that managed the Continuous Plankton Recorder Survey with its 70+ year biodiversity time-series, merged with the MBA earlier this year. Also in Plymouth but a little younger, is the Plymouth Marine Laboratory (PML). Founded in 1977, PML has provided evidence-based environmental solutions to societal challenges by applying cutting-edge, interdisciplinary research in many marine topics many of which are societally relevant.

As well as these research lead institutions; Plymouth is also home to other marine organisations: the National Marine Aquarium, the Diving Diseases Research Centre, and the Royal Navy’s Hydrography School.

Thus there is a very broad range of marine research to be found in the city and you will hear further about some of this on Wednesday and on Friday.

In welcoming you to Plymouth, we are mindful of our tradition of working hard and playing hard whether it be at sea or on land. So as well as working hard on SCOR, the Local Organising Committee has arranged a range of other activities for you and hope that you are able to participate in them all. Enjoy our city of Ocean Discovery!

Susie Bissell (UoP), Sally Bishop-Hawes (UoP), Peter Burkill (UoP & SCOR), Nick Higgs (UoP), Thecla Keiser (PML), Richard Thompson (UoP), Willie Wilson (MBA).

**LOCAL ORGANISING COMMITTEE FOR THE SCOR 2018 ANNUAL MEETING**

## Conference Venue – Marine Station



# Delegate Information

Although Plymouth is a small city we recommend on arrival you get a taxi to your hotel. The City Centre is a 15 minute-walk from the Marine Station, in addition Plymouth Hoe and the Barbican are also just a 10 – 15 minute walk. The main University of Plymouth Campus is a 20 minute walk from the Marine Station.

All maps can be found in the maps section of the handbook.

## Conference Venue – Marine Station

Situated at Coxside on Plymouth's historic waterfront, the Marine Station is a short walk from the main University campus and has direct access to the Plymouth Sound and Estuaries Special Area of Conservation and surrounding coasts.

All delegates will be required to register in the first floor foyer of the Marine Station to collect their conference information on arrival. All conference sessions will take place in the Marine Station.

## Registration and Information Desk

Located in the first floor foyer of the Marine Station, the Registration and Information Desk will be open on Monday 3<sup>rd</sup> September between 14:00 and 18:00 and again on Tuesday 4<sup>th</sup> September between 08:30 and 12:00. Members of the University of Plymouth Events Team will be on hand to assist with information about the conference and general information about Plymouth during these times.

## Free Wi-Fi

Conference delegates can enjoy free, unlimited internet access across the campus. On arrival select **Guest WiFi UoP** to access the internet across all of your devices whilst on the main University of Plymouth campus.

## Conference Refreshments

All refreshments will be served in the first floor foyer area of the Marine Station. Where we have been pre-informed of a specific dietary requirement this will be catered for.

## Access

There are toilets and disabled toilets located on the first floor of the building, these will be clearly signed. There is a lift and staircase to the first floor.

Fire exits are clearly marked through the main entrances/exits to the building and from the meeting room. Please follow the green and white signs to the nearest exit in the event of a fire alarm sounding.

The fire rendezvous point for the Marine Station is at the main entrance gates. People with disabilities who are unable to use the stairs should wait at the top of the stairs whereby they will be assisted out of the building.

Smoking is prohibited in all common use areas such as classrooms, laboratories, offices and lecture theatres. Smoking areas are located outside all buildings. It is prohibited to smoke within 5 metres of a building.

All security personnel are trained first aiders, as well as some staff members; please contact a member of University of Plymouth staff in the first instance.

### **Photography**

There may be instances throughout the conference when the University of Plymouth official photographers may take pictures for PR and marketing purposes. In some instances you may have been asked in advance for your permission, and in others you may be asked on the day. If you do not wish to appear in any photographs please make this known to the photographer or the conference organisers.

### **Cash Machine**

Cash Machines are located throughout the city centre, many within banks and building societies. Most are free to use. Cash is dispensed in GB pounds sterling.

### **Car Parking**

At the University of Plymouth, we are serious about sustainability. In line with our green travel plan, we encourage people to find alternatives to using cars (unless it is essential due to mobility issues). Parking at all University buildings is highly restricted.

If you are a blue badge holder we will endeavour to offer parking at all times, please let the University of Plymouth Events Team know prior to your arrival.

There are plenty of car parks in the area, many located within walking distance of the Marine Station. A full list and maps are available from the [Plymouth City Council](#) website. The nearest are Harbour Carpark and Elphinstone Carpark. Your hotel may offer parking at a reduced rate, please ask your individual accommodation provider for further information.

### **Local Transport**

Plymouth is a compact city and therefore easy to walk to various destinations during your stay. Hackney Carriage Taxis are available at the Train Station and around the City Centre and local buses are frequent. Please ask at the Registration and Information Desk if you require further information about buses, taxis or the Plymouth Park & Ride service.

Plymouth Taxis	01752 606060
Taxi First	01752 222222
Towercabs	01752 252525
Need-A-Cab	01752 666222

## Other Practical Information

### Weather

The September temperatures in Plymouth range on average from 11°C to 18°C. September is one of the dryer months of the year, with on average 12 days containing rain and approximately 5 hours of sunshine a day. The sea temperature is about 16°C.

### Electricity

Electricity safety standards in the UK are higher than in many other countries. UK appliances are fitted with a three-pin plug. Wall sockets have a switch controlling power supply. [Adapters](#) are easy to find; if your country uses lower voltage than the UK average of 230v, you may also need a converter.



### Tax

A 20% VAT tax is usually automatically added to all purchased products. All receipts will have this information specified.

### Tipping

In restaurants it is customary to tip 10% of the total bill if it hasn't already been added. There is no requirement to tip in bars, pubs or coffee shops.

### Dining Out

There are a good variety of bars, pubs, cafes and restaurants in Plymouth with many of them being located on the Barbican or close to the City Centre. For further information please use the [Visit Plymouth](#) website.



# Social Programme

## Walking Tour – Tuesday 4<sup>th</sup> September

18:30 – 20:00

Delegates have the opportunity to join a guided walking tour in and around the historic Barbican and the Hoe areas of Plymouth, including passing the Mayflower steps (Pilgrim Fathers 1620) and Elizabethan merchant houses and gardens.

Your guide will meet you at the Marine Station. The tour will finish on the Barbican where you can have a drink or eat at a local restaurant.



## Conference Dinner – Wednesday 5<sup>th</sup> September

19:00 – 22:00

Please join us for the Conference Dinner taking place at the National Marine Aquarium, Britain's most up to date aquarium, a superb venue with spectacular underwater displays; this should be an evening to remember. Delegates will dine among the exhibits enjoying a three course dinner.



## Boat Trip – Thursday 6<sup>th</sup> September

19:00 – 21:00

Delegates can unwind and enjoy the evening as they set sail across Plymouth Sound, flanked by the beautiful Devon and Cornish Coasts. The Spirit of Plymouth will pass Plymouth Hoe and Smeaton’s Tower, magically lit up at night and the famous Drake’s Island, heading for the calm waters of the River Tamar. Set sail on the waters of the South West coast, savour the beautiful scenery as the sun sets in the West. Bar and buffet meal available. Warm layers are advised out on the water.

Delegates will be joined by those attending the NOSASSOSO conference hosted by Plymouth Marine Laboratory.

Meet at the Plymouth Landing Stage (adjacent to the Mayflower Steps) where the boat will depart at 19:00 – please see the map below.



# Plymouth: Britain's Ocean City

**Plymouth Map**  
with key attractions and distances

All distances are timed in minutes walking the shortest and most direct route from the Piazza. All times are approximate depending on individual speed of walking. The times are shown like this example: **1** **7**



**1** Independent Quarter



**2** The Piazza



**3** Royal Parade



**4** Millbay



**5** The Sound



**6** The Hoe



**7** Mayflower Steps



**8** Plymouth Gin



**9** AI Fresco dining



**10** Historic Barbican



**11** Modern Barbican



**12** Drake Circus



**13** Cornwall Street



**14** City Museum and Art Gallery



**15** Roland Levinsky Building



**16** The Octagon



**17** The Barbican Leisure Park



**18** The Octagon

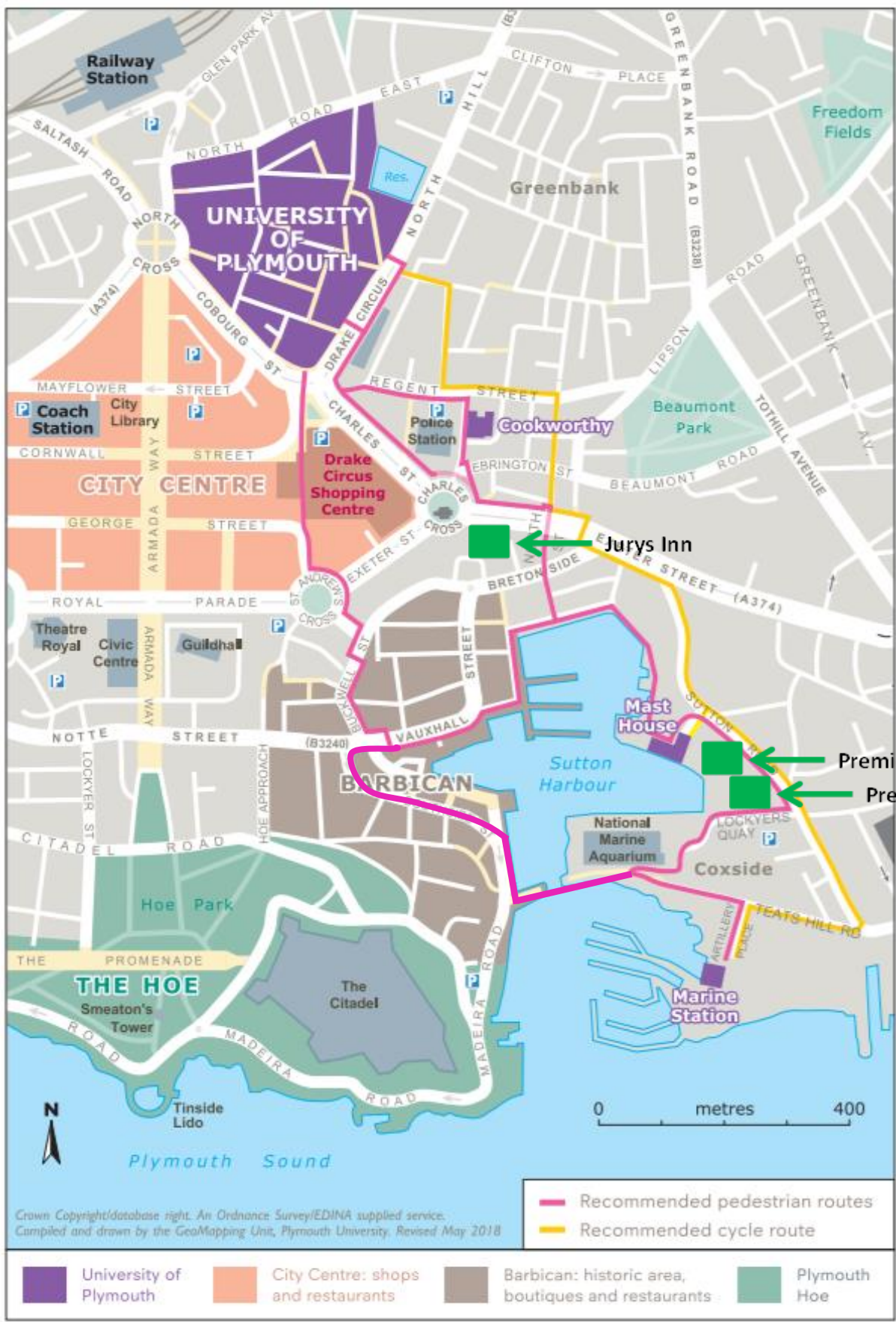


**19** The Octagon



**20** The Octagon

# Directions to the Marine Station



## Walking Route from the Barbican to the Marine Station

A temporary walkway is opening across Sutton Harbour Lock to help people cross the harbour while the pedestrian footbridge is closed for repairs.

People will be able to use a new walkway across the inner lock gates for short periods of time in the day, depending on waiting marine traffic, tides and free flow times, to cross from the historic Barbican Quarter to the Fishing Quarter and to visit the National Marine Aquarium and Marine Station. This temporary walkway will be in addition to the option of catching the daily Sutton Harbour Ferry Service or walking around East Quay and North Quay, which form the City Quarter and Leisure Quarter of Sutton Harbour.

The temporary solution will not be suitable for small children, pushchairs, prams, bicycles, wheelchairs or anyone with mobility issues, as it involves steps and a narrow, single-file, adapted path crossing the industrial inner lock gates, which were not designed for pedestrian use.



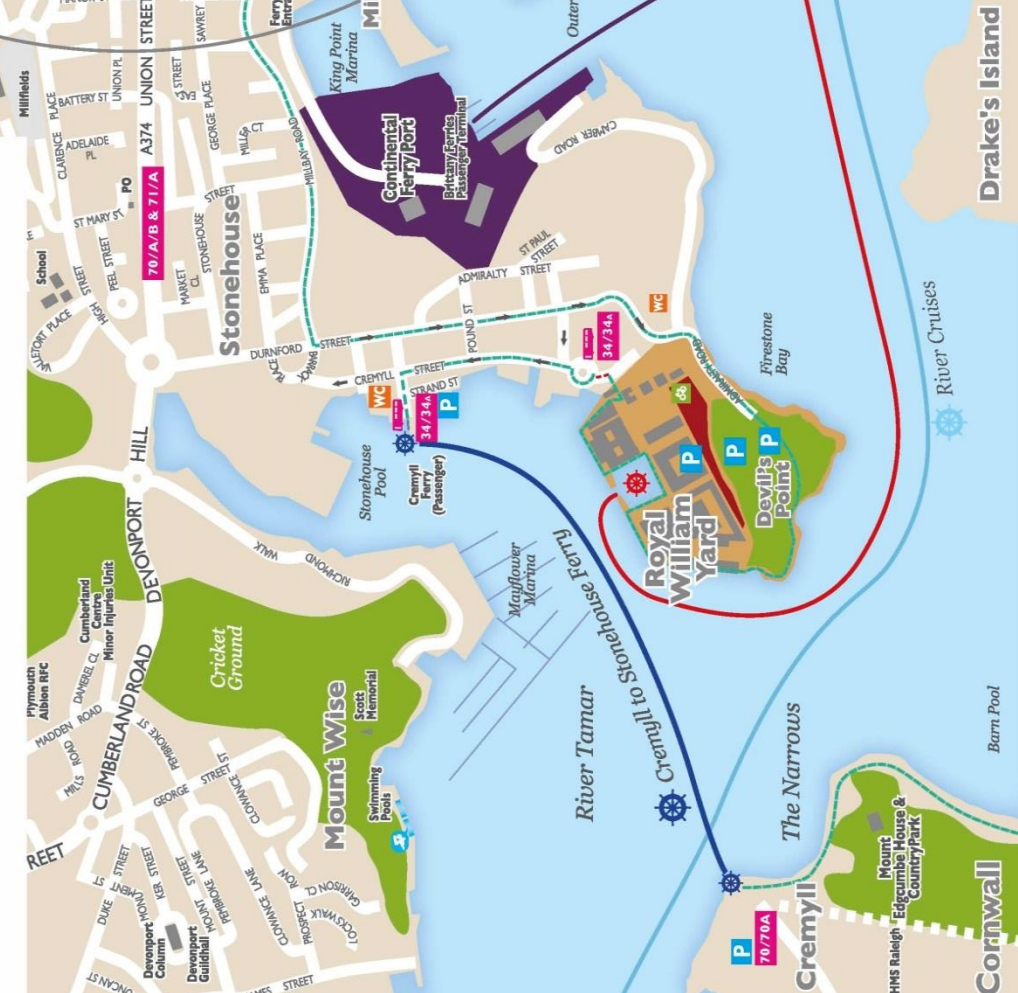
Temporary walkway across Sutton Harbour. Alternatives are Sutton Harbour Ferry Service or walking around East Quay and North Quay, which form the City Quarter and Leisure Quarter of Sutton Harbour

## Waterlinks

- Barbican Wharves Hub
- Mount Batten Waterlinks
- Royal William Yard Waterlinks
- Mount Edgcombe Waterlinks
- River Cruises
- Cawsand Waterlinks

## Places of Interest

- Cycle Hire
- Taxi Rank
- Parking
- South West Coast Path / Waterrort Walkway
- Tourist Information
- Public/Disabled Toilets
- University Campus
- Map Boards
- Smeaton's Tower
- RN War Memorial
- Memorial
- Parks & Recreational Areas
- Charles Cross
- Police Station



# Overview Programme

## Day 1 – Monday 3<sup>rd</sup> September

**14:00 - 16:00** SCOR Executive Committee meets in closed session

**16:00 – 18:00** Welcome desk open and refreshments

**18:00 – 20:00** *Ice-breaker BBQ*

## Day 2 – Tuesday 4<sup>th</sup> September

**09:00 – 09:30** Welcome, Logistics and Introductions

**09:30 – 09:45** President's Report - Sicre

**09:45 – 10:00** Executive Director's Report - Urban

**10:00 – 10:30** Results of 2018 SCOR Elections and SCOR Constitution - Burkill

**10:30 – 11:00** *Tea and coffee*

**11:00 – 12:30** Current WGs

**12:30 – 13:00** United Nations Decade of Ocean Science  
*United Nations Decade of Ocean Science for Sustainable Development (2021-2030)*  
Vladimir Ryabinin

**13:00 – 14:00** *Lunch*

**14:00 – 15:30** WG Proposals  
Develop short list and select proposals

**15:30 – 16:00** *Tea and coffee*

**16:00 – 17:30** WG Proposals  
Develop short list and select proposals

**18:30 – 20:00** Walking tour of Plymouth  
Starting from the Marine Station

## Day 3 – Wednesday 5th September

**09:00 – 10:30** WG Proposals  
Feedback to proponents

**10:30 – 11:00** *Tea and coffee*

**11:00 – 12:00** IMBER - Claydon  
GEOTRACES - Henderson  
SOLAS - Miller

**12:00 – 13:00** IQOE - Urban  
IIOE-2 - Burkill  
SCAR - Nath

**13:00 – 14:00** *Lunch*

**14:00 – 15:30** Richard Thompson – Director Marine Institute  
Willie Wilson – Director MBA  
Stephen De Mora – CEO PML

	<b>Gideon Henderson – Chair UK SCOR</b>
<b>15:30 – 16:00</b>	<i>Tea and coffee</i>
<b>16:00 – 17:30</b>	<b>Poster Session</b> Posters by young Plymouth scientists. Refreshments included  *Full list of posters at the end of the programme
<b>19:00 – 22:00</b>	<b>Conference Dinner</b> National Marine Aquarium

## Day 4 – Thursday 6<sup>th</sup> September

<b>09:00 – 10:00</b>	<b>GlobalHAB - Berdalet</b> <b>JCS - Smythe-Wright</b> <b>SCOR Capacity Building Activities - Feeley/Urban</b>
<b>10:00 – 10:30</b>	<b>SOOS - Newman</b>
<b>10:30 – 11:00</b>	<i>Tea and coffee</i>
<b>11:00 – 12:00</b>	<b>IOC - Arico</b> <b>PICES - Batchelder</b> <b>WCRP - Sparrow</b> <b>SCAR - Brussaard</b>
<b>12:00 – 12:30</b>	<b>IABO - Miloslavich</b> <b>IAMAS - Turner</b> <b>IAPSO - Smythe-Wright</b>
<b>12:30 – 13:00</b>	<b>InterRidge - Devey</b> <b>IOCCG - Sun</b> <b>GACS -</b>
<b>13:00 – 14:00</b>	<i>Lunch</i>
<b>14:00 – 14:30</b>	<b>POGO - Seeyave</b>
<b>14:30 – 15:30</b>	<b>Finances</b> Report of Ad Hoc Finance Committee
<b>15:30 – 16:00</b>	<i>Tea and coffee</i>
<b>16:00 – 17:00</b>	<b>2019 SCOR Meeting - Zhang</b> <b>Close of Meeting</b>
<b>17:00 – 18:30</b>	<b>SCOR Executive Committee meets in closed session</b>
<b>19:00 – 21:00</b>	<b>Tamar River Cruise</b> Including buffet and cash bar



## Day 5 – Friday 7<sup>th</sup> September

09:30	Coach pickup at the Premier Inn and Jurys Inn
09:45 – 10:45	Tour of University of Plymouth Coast facility
10:45	Transfer to Marine Biological Association
11:00 – 12:30	Tour of the Marine Biological Association
12:30 – 13:30	Lunch in the MBA Common Room
13:30	Transfer to Plymouth Marine Laboratory
13:45 – 16:00	Tour of Plymouth Marine Laboratory
16:00	Coach to Plymouth Train Station and hotels

When you register you will be asked to confirm your participation in the social events and your departure plans.

Please note that on the Friday visits to host laboratories, we hope you will do the whole tour. If you wish to only visit a specific institution, please arrange your own transportation and arrive at the time shown.

### **University of Plymouth Coast Facility**

Marine Building  
James Street  
Plymouth  
PL4 8AA

### **Marine Biological Association**

The Laboratory  
Citadel Hill  
Plymouth  
PL1 2PB

### **Plymouth Marine Laboratory**

Prospect Place  
Plymouth  
PL1 3DH

## Posters

<b>Presenter (bold) &amp; Co- authors</b>	<b>Topic</b>
<b>Amelia Bridges</b>	Predictive habitat modelling to assess the extent and distribution of vulnerable marine ecosystems
Angela Milne and <b>Simon Ussher</b>	Iron biogeochemistry in the UK GEOTRACES programme
<b>Caroline White</b> and Simon Ussher	Comparison of natural and anthropogenic sources of atmospheric nitrogen in the coastal zone and the open ocean
<b>Charel Wohl</b>	Continuous seawater measurements and depth profiles of VOCs in the Canadian Arctic
<b>Elliot Price</b> , Rowena Stern, Rachel Jeffreys and Claire Mahaffey	Identifying food resources for arctic zooplankton
<b>Jack Dickenson</b>	The role of NADPH Oxidase in diatom ROS signalling
<b>Jennifer Skinner</b>	Mapping the Spread of Marine Plastics
<b>Kathryn Pack</b> , Marc Rius and Nova Mieszkowska	Modelling invasive species distributions
<b>Kimberley Bird</b> and Michael Cunliffe	SCOR Surface Microlayer Working Group Research Cruise
<b>Kimberley Bird</b> and Michael Cunliffe	SCOR Surface Microlayer Working Group activities and outputs
<b>Leoni Adams</b> , Nova Mieszkowska, Steve Hawkins and Mike Burrows	MarClim and the Marine Strategy Framework Directive
<b>Marie-Fanny Racault</b>	Earth Observations for Ecology and Epidemiology of Water-associated Diseases
<b>Marie-Fanny Racault</b>	Water Quality of Vembanad Lake
<b>Michael Beddington</b> and Francesca Pallottino	Modelling biogeochemical processes in the Tamar estuary and beyond
<b>Nils Piechaud</b>	Using autonomous underwater vehicles for marine habitat mapping
<b>Poppy Best</b>	Characterising the microbiome of deep-sea sponges
Woodward, Aoyama, Tanhua, Bjorkman, Becker, Mahaffey, Daniel, Bakker	Towards comparability of global ocean nutrient data (COMPONUT): An overview of SCOR Working Group 147