



# **Changing Arctic Ocean End of Programme Science Meeting**

Tuesday 30th November 2021

**Zoom Online Meeting - details to be circulated to those who  
have registered**



# Programme

## **0900 - 0915: Welcome and Introductions:**

*Professor David Thomas, Chair of the Programme Advisory Group, University of Helsinki  
Henry Burgess, Head, NERC Arctic Office*

## **SESSION 1: Nutrient cycles: CHAIR - Dr Ruth Airs, Plymouth Marine Laboratory**

### **0915 - 0930: The Changing Arctic Ocean Seafloor (ChAOS): How changing sea ice conditions impact biological communities, biogeochemical processes and ecosystems**

*Dr Sian Henley (Edinburgh University), Dr Jasmin Godbold (Southampton University), Dr Terri Souster (formerly BAS, now University of Tromsø), Felipe Sales de Freitas (University of Bristol), and Christian Maerz (Leeds University).*

### **0930 - 0945: How will changing freshwater export and terrestrial permafrost thaw influence the Arctic Ocean? (CACOON)**

*Dr Juri Palmtag, Northumbria University*

### **0945 - 1000: Pathways and emissions of climate-relevant trace gases in a changing Arctic Ocean (PETRA)**

*Professor Dr Hermann Bange and Hanna Campen, GEOMAR Helmholtz Centre for Ocean Research Kiel*

## **1000 - 1020: Q&A and Panel Discussion**

## **1020 - 1030: BREAK**

## **SESSION 2: Food webs: CHAIR - TBC**

### **1030 - 1045: Arctic productivity in the seasonal ice zone (Arctic PRIZE)**

*Professor Finlo Cottier, Scottish Association for Marine Science, Dr Marie Porter, Scottish Association for Marine Science and Stacey Connan-McGinty, University of Strathclyde*

### **1045 - 1100: Can we detect changes in Arctic ecosystems? (ARISE)**

*ARISE Team*

### **1100 -1115: Ecosystem approach to harvesting in the Arctic: walking the tightrope between exploitation and conservation in the Barents Sea (MiMeMo)**

*Professor Mike Heath, University of Strathclyde*

## **1115 - 1135: Q&A and Panel Discussion**

## **1135 - 1145: BREAK**

## **SESSION 3: Pollutants and Light: CHAIR - Dr Gaëlle Veyssière, British Antarctic Survey**

### **1145 - 1200: Effects of ice stressors and pollutants on the Arctic marine cryosphere (EISPAC)**

*Professor Crispin Halsall, Lancaster University*

**1200 - 1215: Chronobiology of changing Arctic Sea Ecosystems (CHASE)**

*Dr Laura Peyton, Alfred Wegener Institute, Dr Jennifer Freer, British Antarctic Survey and Dr Kim Last, Scottish Association for Marine Science*

**1215 - 1230: Ecosystem functions controlled by sea ice and light in a changing Arctic (Eco-Light)**

*Dr Giulia Castellani, Alfred Wegener Institute*

**1230 - 1250: Q&A and Panel Discussion**

**1250 - 1400: LUNCH and POSTERS**

**SESSION 4: Part 1 - Primary Production: CHAIR - Anabel von Jackowski, GEOMAR**

**1400 - 1415: Diatom Autecological Responses with Changes To Ice Cover (Diatom-ARCTIC)**

*Dr Karley Campbell, The Arctic University of Norway*

**1415 - 1430: Understanding the links between pelagic microbial ecosystems and organic matter cycling in the changing Arctic ( $\mu$ ARC)**

*Dr Birthe Zäncker, Marine Biological Association*

**SESSION 4: Part 2 - Secondary Production and above: CHAIR - Flo Atherden (University of Southampton)**

**1430 - 1445: Mechanistic understanding of the role of diatoms in the success of the Arctic Calanus complex and implications for a warmer Arctic (DIAPOD)**

*Dr Jennifer Freer, British Antarctic Survey*

**1445 - 1500: Potential benefits and risks of borealisation for fish stocks and ecosystems in a changing Arctic Ocean (Coldfish)**

*Dr Kim Vane, Alfred Wegener Institute and Dr Matthew Cobain (Newcastle University)*

**1500 -1515: Linking Oceanography and Multi-specific, spatially-Variable Interactions of seabirds and their prey in the Arctic (LOMVIA)**

*Dr Anne Sophie Bonnet Lebrun, British Antarctic Survey*

**1515 - 1545: Q&A and Panel Discussion**

**1545 - 1630: BREAK and POSTERS**

**SESSION 5: Circulation: CHAIR - Dr Stefanie Rynders, National Oceanography Centre**

**1630 - 1645: Advective Pathways of nutrients and key Ecological substances in the ARctic (APEAR)**

*Dr Benjamin Rabe, Alfred Wegener Institute and Dr Yevgeny Aksenov, National Oceanography Centre*

**1645 - 1700: Primary productivity driven by escalating Arctic nutrient fluxes?  
(PEANUTS)**

*Dr Kirstin Schulz, Alfred Wegener Institute*

**1700 -1730: Panel discussion and final thoughts**

**1730: CLOSE**

# Posters

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*Poster sessions are divided into two sessions:*

*Session 1: 1250 - 1400 - Posters 1 to 12*

*Session 2: 1545 - 1630 - Posters 13 to 22*

*Each poster will be allocated a virtual breakout room. Once in the room, the presenter will be able to share their screen and discuss the poster with those in the virtual room. Attendees will be free to join any breakout room throughout the session by returning to the main room and choosing another room to enter. Format should be .pptx or .pdf files for sharing.*

## **POSTER SESSION 1:**

### **Poster 1: Arctic connections between sea ice, ocean dynamics and biogeochemistry in the UK Earth System Model (UK ESM1): present climate and future scenarios**

Yevgeny Aksenov, National Oceanography Centre

### **Poster 2: Autonomous profiler reveals light intensity triggering the seasonal migration of Arctic zooplankton**

Hauke Flores, Alfred Wegener Institute

### **Poster 3: Changing Arctic Ocean**

Henry Burgess/Nicola Munro, NERC Arctic Office

### **Poster 4: Changing Arctic Ocean Data Management**

Robyn Owen, British Oceanography Data Centre

### **Poster 5: Do microbial substrate regimes in the Fram Strait differ between summer and fall?**

Anabel von Jackowski, GEOMAR Helmholtz Centre for Ocean Research Kiel

### **Poster 6: Variability of surface transport pathways and how they affect basin-wide connectivity and nutrients**

Chris Wilson, National Oceanography Centre

### **Poster 7: High Exposure of Perfluoroalkyl Substances (PFASs) in Two Free-living Guillemot Species in the Subarctic and Arctic**

Rui Shen, Helmholtz-Zentrum Hereon

### **Poster 8: High-resolution bathymetry models for the Lena Delta and Kolyma Gulf coastal zones**

Jens Strauss, Alfred Wegener Institute

### **Poster 9: Light transmission and attenuation through varying Arctic sea-ice during late spring and summer**

Gaëlle Veyssièrè, British Antarctic Survey

**Poster 10: Lower trophic level ecosystem response to change in higher trophic level production: A modelling study in the North Atlantic/Arctic Ocean**

Ute Daewel, Helmholtz-Zentrum Hereon

**Poster 11: Modeling ecosystem responses to changes in under-ice light field**

Giulia Castellani, Alfred Wegener Institute

**Poster 12: Modelling impacts of riverine terrestrial organic matter on the lower trophic levels of an Arctic shelf ecosystem**

Michael Bedington, Plymouth Marine Laboratory

**POSTER SESSION 2:**

**Poster 13: Net heterotrophy in high arctic first-year and multi-year spring sea ice**

Karley Campbell, The Arctic University of Norway

**Poster 14: New Unified Arctic Ocean hydrography and biogeochemical data base: Identifying pathways of nutrients**

Myriel Vredenburg, Alfred Wegener Institute

**Poster 15: Nitrogen and stable isotope inventories in the Lena Delta**

Tina Sanders, Helmholtz-Zentrum Hereon

**Poster 16: Nitrous Oxide and Methane Distributions During the 2021 Synoptic Arctic Survey**

Ian Brown, Plymouth Marine Laboratory

**Poster 17: Quantifying seafloor dynamics of organic matter in the Barents Sea shelf sediments**

Felipe Sales de Freitas, University of Bristol

**Poster 18: Spatio-temporal variability of the primary and secondary production in the Barents Sea: from a 1D to a 3D modelling approach**

Déborah Benkort, Helmholtz-Zentrum Hereon

**Poster 19: Synthetic Shelf Sediment Maps for the Greenland Sea and Barents Sea**

Jack Laverick, University of Strathclyde

**Poster 20: The permafrost thaw fingerprint: particulate organic carbon from the Lena river to the Laptev Sea**

Olga Ogneva, Alfred Wegener Institute

**Poster 21: Emerging shift in shelf-deep ocean interactions in the changing Arctic Ocean**

Yevgeny Aksenov, National Oceanography Centre

**Poster 22: What factors affect the biosynthesis of sea ice algal lipids and trophic markers?: insights from a multi-biomarker approach.**

Martin Graeve, Alfred Wegener Institute