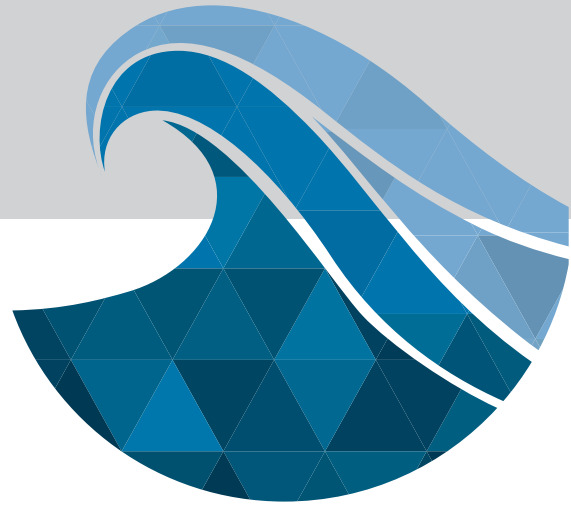




NTNU – Trondheim  
Norwegian University of  
Science and Technology



# Team up for marine innovation at the NTNU Ocean Week

**Trondheim 4-7 May 2015**

- Catch the latest developments in marine and maritime science and innovation
- Meet experts across the knowledge value chain with common interests
- Join the process towards future collaborative actions

The event is organized by NTNU Ocean Science and Technology.

Our vision is “Knowledge for a sustainable ocean space”

**Meet us in Trondheim!**

**Conference programme and registration:**

[www.ntnu.edu/oceans/ocean-week](http://www.ntnu.edu/oceans/ocean-week)



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NTNU Ocean Week

# NTNU Ocean Week – Creating new knowledge and ideas together, 4-7 May 2015, Trondheim

**Programme** (under development):

Monday 4 May

**09:00 Registration**

**10:00 Opening** by Gunnar Bovim, Ingrid Schjølberg (NTNU)

**10:30 Plenary Session** (Chair: Stein Mortensholm)

- Marine and maritime research in a historical perspective (Håkon With Andersen, NTNU)
- Future Opportunities in the Ocean Space (Rune Torhaug, DNV-GL)
- Industry and university: a platform for innovation (Erik Glende, Kongsberg Group)
- Closing the global food gap in 2050: Prospects for marine production and development of new marine technology (Vegar Johansen, SINTEF Fisheries and Aquaculture)

**12:00 Lunch**

**13:00 Parallel sessions**

**Session 1 Maritime transport** (Chair: Bjørn Egil Asbjørnslett)

**Keywords:** Safe, smart, sustainable

- Strategic fleet renewal under uncertainty: A case study from RoRo shipping (Kjetil Fagerholt, NTNU)
- Decision support on Liner Shipping Network Design (Berit Dangaard Brouer, DTU)
- Energy management and propulsion for greener operations of ships (Asgeir Sørensen, NTNU)
- Risk and safety – knowledge transfer from oil & gas to maritime transport (Stein Haugen, NTNU)
- Virtual prototyping of marine operations (Hans Petter Hildre, HiÅ)
- Does energy efficiency pay? Evidence from the drybulk timecharter market (Roar Os Ådland, NHH)
- Virtual Sea Trial – Improved early stage ship design by simulation of new technology in actual operation (Trond Johnsen, MARINTEK)
- Hydro Contest - Training future generations on energy efficiency (Jérémie Lagarrigue, Hydros Foundation)
- Sustainable Transport on the Oceans through Knowledge of Efficient Design (STOKED) Eirik Bøckmann, NTNU

**Session 2 Into the deep ocean** (Chair: Nils Torbjörn Ekman, NTNU)

**Keywords:** Biology, ecosystems, sensors, communication

- Subsea future (NN, Statoil)
- Subsea sensor networks : Real time monitoring through stationary integrated sensor units and underwater robotics (Arild Brevik, Subsea Monitoring)
- Underwater Acoustics in Ocean Space - communication, surveillance and exploration (Jens Hovem, NTNU)
- Enabling technologies and their applications in the exploration of the polar night biology (Geir Johnsen, NTNU)
- Potential effects of climatic and non-climatic stressors on the marine ecosystem and biological carbon pump (Murat Van Ardelan, NTNU)
- Improving our understanding of the flow-biota interactions with interdisciplinary research teams – an example with marine macroalgae (Pierre-Yves Henry, NTNU)
- Integrated Environmental Mapping and Monitoring; a methodological approach to optimise knowledge gathering and sampling strategy (Ingunn Nilssen, Statoil and Øyvind Ødegård, NTNU)

### **Session 3 Aquaculture technology** (Chair: Kjell Inge Reitan)

**Keywords:** Structures, operations

- SFI EXPOSED-Technology for safe and effective aquaculture in exposed environment (Hans Bjelland, SINTEF)
- Challenges with Closed Flexible Fish Cages in the sea (Ida Strand, NTNU AMOS)
- Robust Design and High Reliability for Floating Cage Systems (Martin Søreide, Aqualine)
- Optimising aquaculture production and fish welfare through wireless underwater technology and mathematical modelling (Martin Føre, NTNU/SINTEF)
- Simulating Aquaculture in Virtual Reality (Ekaterina Prasolova-Førland, NTNU)
- Online fish – satisfy my wish: ACE – the ultimate research facility for autonomous aquaculture technology (Finn Victor Willumsen, ACE)
- Using technology as a measure to reduce disease contamination (Sverre Marvik, Anteo)
- Technology akvARENA – a professional cluster for supply industry (Noralf Rønningen, akvARENA)

**17:00 Sushi gathering**

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Tuesday 5 May

### **10:00 Plenary session** (Chair: Stein Mortensholm)

- The Research Council of Norway – Policy of Ocean research from a marine perspective (Christina Abildgaard, Research Council of Norway)
- Leading the blue revolution (Alf Helge Årskog, Marine Harvest)
- Can marine spatial planning contribute to improved sustainability? Sorting out and reconciling different interests – lessons from the Norwegian coast (Bjørn Hersoug, University of Tromsø)
- The solwara 1 deep sea mining project; challenges and solutions (Jonathan Lowe, Nautilus Minerals Inc.)

**12:00 Lunch**

### **13:00 Parallel sessions**

#### **Session 1 Marine energy** (Chair: Olav B. Fosso)

**Keywords:** Wind, wave, tidal, oil & gas

- NTNU Energy: Research and education at NTNU on marine based energy – an overview (Olav B. Fosso, NTNU)
- Status and future perspectives on energy from wind, wave and tidal current (Torgeir Moan, NTNU)
- Oil and gas, research challenges and future perspectives (Egil Tjøland, NTNU)
- Wave energy (tbc) (Elisabetta Tedeschi, NTNU)
- New trends in Integrated Operations (Arne Ulrik Bindingsbø, Statoil/NTNU)
- MTO (Man – Technology – Organization) in an automated future (Anders Volland, MARINTEK)
- Marine biofuel (Matilde Chauton, NTNU/SINTEF)
- Challenges related to large offshore wind turbines (Lene Eliassen, NTNU/Statkraft)

#### **Session 2 Aquaculture science** (Chair: Kjell Inge Reitan)

**Keywords:** Sustainability, quality, new feed resources

- Fish farmers and authorities coping with the wickedness of aquaculture (Tonje Osmundsen, NTNU Social Research)
- The R&D perspective on the Aquaculture industry (Merete Schrøder, FHF)
- Seafood quality (Turid Rustad, NTNU)
- SFI CtrlAQUA, the Centre for Closed-containment Aquaculture (Bendik Fyhn Terjesen, NOFIMA)
- Strategies for microbial control in aquaculture (Kari Attramadal, NTNU)
- Macroalgae cultivation: a new marine bioeconomy in Norway (Aleksander Handå, SINTEF)
- Lower tropic levels as feed source in aquaculture (Rolf Erik Olsen, NTNU)
- Microorganisms – work horses for production of DHA and EPA (Olav Vadstein, NTNU)
- Methods for sustainable growth in aquaculture (Erik Gracey, NTNU)

### **Session 3 Deep sea mining (Chair: Steinar Ellefmo)**

**Keywords:** Resources, exploration, innovation

- Marine Minerals and Ocean Mining Potential in the North Atlantic - Results and future perspectives (Steinar Ellefmo & Fredrik Søreide, NTNU)
- The industry (land based) perspective (Ivar Fossum, Nordic Ocean Resources AS)
- The use of AUVs in deep sea mining (Bjørn Gjelstad, Kongsberg Maritime AS)
- Underwater hyperspectral imaging in deep sea applications (Jørgen Tegdan, Ecotone)
- From MAREANO to the deep sea - technology and knowledge transfer (Terje Thorsnes, NGU)
- Riser Technology Challenges for Deep Sea Ocean Mining Applications (Svein Sævik, NTNU)
- How can we handle environmental aspects in Deep Sea Mining? (Jens Laugesen, DNV GL)
- In deep water - Responsible research and innovation under conditions of uncertainty (Siri Carson, NTNU)
- Communicating deep sea mining projects (Jonathan Lowe, Nautilus Minerals Inc)

**17:00 Conference dinner** (Restaurant "Kommandanten")

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## Wednesday 6 May (10-17)

### **10:00 Plenary session** (Chair: Stein Mortensholm)

- (Sissel Eriksen, Norwegian Petroleum Directorate)
- Turning on the light in the Ocean Space (Morten Smelror, NGU)
- UAV in marine applications (Thor Inge Fossen, NTNU)
- Marine Science and Technology at NTNU – yesterday, today and tomorrow (Torbjørn Digernes, NTNU)

**12:00 Lunch**

### **13:00 Parallel sessions**

#### **Session 1 Arctic exploration** (Chair: Ståle Emil Johansen)

**Keywords:** safety, operations, ecosystems

- Arctic basins (Ståle Emil Johansen, NTNU)
- Navigation and communication for safe and efficient maritime operations in the Arctic (Beate Kvamstad, MARINTEK)
- Into the High Arctic – exploring the opportunities and challenges of the new frontier (Gunnar Sand, SINTEF)
- ARCEX: Research Centre for Arctic Petroleum Exploration (Morten Hald, UiT)
- SAMCoT: the impact of the project on future operations in the Arctic (Sveinung Løset, NTNU)
- Appreciating rare, extreme ice events: How to understand ice-structure collisions? (Ekaterina Kim, NTNU AMOS)
- Space as a tool for safe operations in the Arctic (Pål Brekke, Norwegian Space Centre)
- Marine Route Optimization (Jens Olaf Pedersen, DTU)
- UNIS role in research-based education of to-morrows Arctic experts (Ole Arve Misund, UNIS)

#### **Session 2 Marine environment and society** (Chair: Siri Carson)

**Keywords:** Governance, marine management, sustainable development

- Interdisciplinary projects in marine management at NTNU (NN, NTNU)
- How to create sustainable development in a UNESCO world development site? (Katrin Blomvik, Stiftinga Geirangerfjorden verdsarv)
- Motivating sustainability in a global, competitive market – Studies of the Norwegian maritime cluster (Dina Margrethe Aspen, NTNU)
- Norway's blue economy on the blue commons – legitimacy and governance (Katrina Rønningen, Centre for Rural Research)
- Studying ecologies of value: Understanding value change in Norwegian seaweed utilisation (Sophia Efstathiou, NTNU)
- Microbial relations: Debates about fish welfare, human health and the environment in Norway in the 1980s (Terje Finstad, NTNU)
- The day cybernetics died and reappeared in ocean space: On an intellectual biography of Jens Glad Balchen (Gard Paulsen, NTNU)
- Reburial and Analyses of Archaeological Remains (RAAR): reburial in the marine environment as a method for the preservation of waterlogged archaeological remains (Elisabeth Peacock, NTNU)

### **Session 3 Applied Underwater Robotics Laboratory (AUR-Lab) workshop**

**Keywords:** Robotics, monitoring

- Welcome (Harald Ellingsen, NTNU)
- Recent operations and challenges in AUR-Lab (Martin Ludvigsen, NTNU)
- (Asgeir Sørensen, NTNU AMOS)
- (Geir Johnsen, NTNU)
- HAROV - a consumer grade ROV project (Roger Skjetne, NTNU AMOS)
- Painful Legacy on the Sea Bed. Shipwrecks of the Second World War as Heritage (Marek Jasinski, NTNU)
- (Art Trembanis, University of Delaware)
- (Bjørn Gjelstad, Kongsberg Maritime)
- (Nils Størkersen, FFI)
- USVs for bathymetric surveying (Anders Valland, MARINTEK)
- Robotized value chain for overburden monitoring (Paul Mehldal, Statoil)
- From MAREANO to the deep sea - technology and knowledge transfer (Terje Thorsnes, NGU)
- (Ivar Erdal, Ecotone)

Thursday 7 May (9-13.30)

#### **09:00 Applied Underwater Robotics Laboratory (AUR-Lab) workshop**

- AUV / USV demonstration
- A systematic approach to risk assessment – focusing on autonomous underwater vehicles and operations in Arctic areas (Ingrid Utne, NTNU)
- Remotely controlled, locally autonomous IMR operations – why, what and how (Eirik Hexeberg, FMC)
- USVs for bathymetric surveying (Vegard Hofstein, Maritime Robotics)
- PhD sessions

#### **12:00 Lunch**

- AUV Demonstration
- Wrap-up

#### **Other activities (on invitation only):**

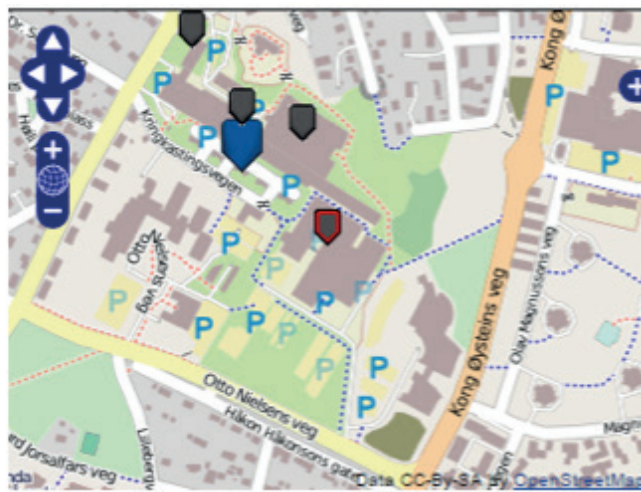
- AMOS user panel meetings (5-6 May)
- Workshop on new activities in polar regions (5 May)

### Venue

All sessions will take place at the NTNU Marine Technology Centre

Address: Otto Nielsens veg 10, Trondheim (Tyholt)

Telephone: +47 73 59 55 30



### Accommodation

Recommended hotel: Scandic Solsiden (Beddingen 1)

<http://www.scandichotels.com/Hotels/Norway/Trondheim/Scandic-Solsiden>.

For reservation of these rooms please contact the hotel directly at [solsiden@scandichotels.com](mailto:solsiden@scandichotels.com)

### Questions?

Contact us at [contact@oceans.ntnu.edu](mailto:contact@oceans.ntnu.edu)

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