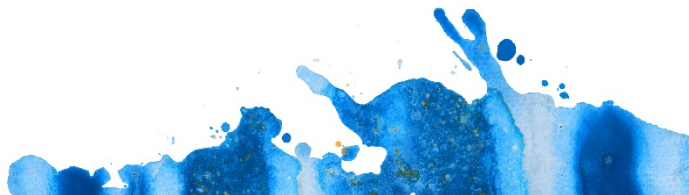


Oceans in Change focuses on the importance of research and knowledge as well as responsible communication of topics related to the Oceans. Our Speakers will talk about the importance of how to bring facts to the spotlight and raise empathy for Ocean Issues. Furthermore, they will consider the significance of research based development and investment.

Ocean Week MONDAY 6: Oceans In Change <i>Registration Open (8:30...)</i>		
Time	Speaker	Topic
PLENARY SESSION MONDAY 6: Oceans In Change Chair: Ingrid Schjøllberg, Director NTNU Oceans. Moderator: Nancy Bazilchuk, Scientific Journalist, Communication Division		
10:00	Francesca Thyssen-Bornemisza - Founder and Chair of Thyssen-Bornemisza Art Contemporary (TBA21)	“Sounds Too Many”, performative lecture
10:25	Vidar Helgesen - Norway’s Special Envoy to the High-level Panel on Building a Sustainable Ocean Economy	Conserve & sustainably use the oceans, Norway’s role. Title TBC
10:40	Iselin Nybø - Norwegian Minister for Science and Higher Education	Knowledge for a Sustainable Ocean Economy
10:55-11:20	Ocean Talks: Panel Discussions on Communication of Ocean research/facts. How to bring facts to the spotlight and raise empathy/awareness for Ocean Issues? <i>Panelists: Thyssen-Bornemisza, Founder & Chair of the Thyssen-Bornemisza Art Contemporary; Helgesen, Norway's Special Representative for the Ocean; Vegar Johansen, CEO SINTEF Ocean; Ingrid Schjøllberg, Director NTNU Ocean</i>	
11:20	Thierry Béchet - EU Ambassador & Head of the EU Delegation to Norway	Together we take care of our oceans
11:35	Jarl Frijs-Madsen - Ambassador of Denmark	Scandinavian strategic scenarios for our Ocean’s future Title TBC
11:50	Liv-Sissel Hagemann Hammer - Senior Vice President DNB Bank ASA	Banking in Change
12:05-12:30	Ocean Talks: Panel Discussion on the role of International Alliances, Research, Technology, Innovation & the Arts for a healthy Ocean <i>Panelists: Béchet, EU Ambassador; Frijs-Madsen, Ambassador of Denmark; Markus Reymann, Director TBA21–Academy; Anna Lim, PhD Candidate Dept. Geoscience & Petroleum; Toril A. N. Hernes, NTNU, Pro-Rector Innovation</i>	
<i>LUNCH at the Radisson Blu Royal Garden (12:30 – 13:30)</i>		
ART & Oceans – Formal Lunch		
Florian Schneider - KIT at Radisson Blu		

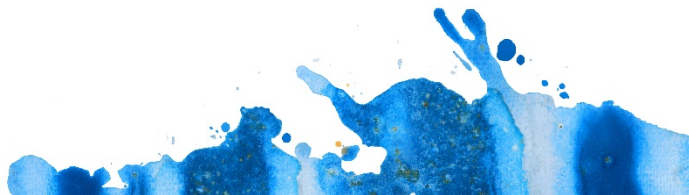
MONDAY May 6 – AFTERNOON PARALLEL SESSIONS

1. **Technology and New Solutions in our Oceans**
2. **Other Voices, Other Stories**
3. **Exploring the Poles – Research to Action**



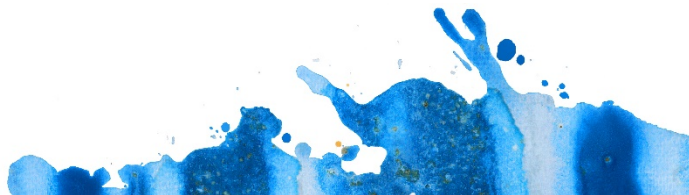
Technology and new solutions in our Oceans focuses on the positive and necessary application of research based new technology for a sustainable interaction with our Oceans. Our speakers will present new research and innovation opportunities. Discussion will unfold under the concept of responsible technological development.

PARALLEL SESSION MONDAY 6: Technology and New Solutions in our Oceans Moderator: Ingrid Schjøberg, Director NTNU Oceans		
Time	Speaker	Topic
13:30	Knut Thomas Kusslid, Director Trondheim Port Authority	Technological Solutions
13:45	Vegar Johansen - CEO SINTEF Oceans	Innovative solutions based on reliable science, a sustainable business
14:00	Olav Bolland - Dean of the Faculty of Engineering, NTNU	Is technology a positive driver of sustainability?
14:15	Elisabeth Maråk Støle - Director NORCE Norwegian Research Centre AS	TBA
14:30	Tonje Eskeland Foss - Regional Director, North, ATEA	Does data driven insight create sustainability in your value chain?
14:45	Oceans Talks Trondheim Ocean Space Center	
15:05	<i>BREAK</i>	
15:35	Ståle Emil Johansen, NTNU Dept. of Geoscience and Petroleum	Electromagnetic detection of mineral resources - a sustainable solution to exploration
15:50	PhD Pitch Session: Bent Haugaløkken, Dept. Marine Technology; Anna Lim, Dept. Geoscience & Petroleum; Øystein Sture, Dept. of Marine Technology	On topics regarding Ocean Exploration Multi-scale geophysical data interpretation to aid effective exploration Experimental Application of Underwater Hyperspectral Imaging on Seafloor Massive Sulphides
16:05	Steffan Lindsø, Director of Emerging Technology, Oceaneering Europe	New autonomous systems for subsea inspection
16:20	Asgeir J. Sørensen, NTNU AMOS	Resident underwater vehicles - the next frontier for efficient underwater operations
16:35	João Borges de Sousa, LSTS - Porto University	Exploring the Northern Pacific Subtropical Front with Multiple Robots
16:50	Christopher Harman, Research Director NIVA	Autonomous monitoring systems for a sustainable ocean
17:05 17:30	Oceans Talks: Business development in Ocean Technology. Helle Moen, Regional Director EGGs Design; Liv-Sissel H. Hammer Senior Vice President DnB Bank ASA; Clara Gonçalves, Executive Director Science and Technology Park - University of Porto	



Other Voices, Other Stories: The Ocean nourishes and sustains not only human life, but all life on Earth. But what can we do to nourish and sustain the ocean? How have humans constructed and represented their relationship to the ocean through the stories we tell about it? How do ocean narratives help us to understand the relationship between our ocean stories and the environmental challenges we now face: climate change, pollution, extinctions, sea level rise, environmental justice, food insecurity, and more? How do the humanities provide new approaches to interpretations, representations, imagination and new understandings of ocean narratives? This session is organized by HAVANSVAR Humanities Ocean Initiative – an NTNU Oceans Pilot on Ethical, Social and Cultural aspects of Ocean Research & Innovation.

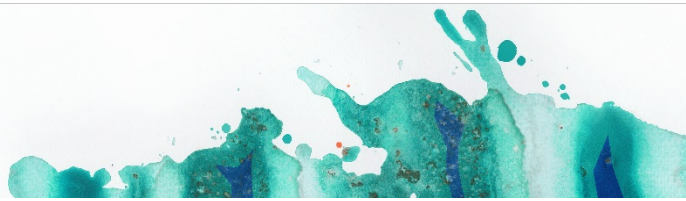
PARALLEL SESSION MONDAY 6: Other Voices, Other Stories		
Moderator: Siri G. Carson, NTNU leader of HAVANSVAR Humanities Ocean Initiative		
Time	Speaker	Topic
13:30	Siri G. Carson, NTNU leader of HAVANSVAR	HAVANSVAR & Ocean Week
13:40	Ursula Munster, Director Environmental Humanities School at UiO	Surviving in a sea of plastic: Biographies of marine life in the Anthropocene
13:55	Marit H. Heller, Senior adviser, Dept. for Oceans, Research Council of Norway	TBA
14:10	Markus Reymann – Director TBA21 Academy	Being Salmon, Being Human
14:25	Julia Leyda, NTNU, Dept. of Art and Media Studies	Oil, Ocean, and the Climate Unconscious in Norwegian Scripted Television
14:40	PhD Session: Sarah Dahle Hermanstad Kim Kirsten Ménage Widar Aalrust Kristoffersen	TBA Perverting Plastics TBA
14:55	Ocean Talks: Interdisciplinary work for Ocean sustainability, the role of Humanities and Social Sciences <i>Munster; Heller; Reymann; Leyda; Toril A.N. Hernes – NTNU Pro-Rector Innovation</i>	
15:15	BREAK	
15:35	Martin Lee Mueller, Associate Professor, Rudolf Steiner University Colleague	Being Salmon, Being Human
15:50	Anne Trine Kjørholt, NTNU/ Norwegian Centre for Child Research	“The Sea, the boat and the fish”. Coastal Childhood work and Knowledge in Transition
16:05	Hanna Musiol, NTNU Dept. of Language and Literature	On art, technology and the ocean
16:20	Kaja Lønne Fjærtøft, Passion for Ocean	TBA
16:35	Pitch session: Anna Madlener, Robotics at KTH Stockholm; Elisabeth Stubberud, NTNU as a Norway Sea Nation	Synergetic ocean immersion: music, art and robots; Narratives of integration and belonging in coastal communities
16:45 - 17:15	Oceans Talks: Innovation in Arts, Humanities and Social Sciences – An Oceans’ Perspective <i>Kjørholt; Fjærtøft; Musiol; Toril A.N. Hernes – NTNU Pro-Rector Innovation</i>	



Exploring the Poles – Research to Action focuses on the great significance of the Arctic and Antarctic both for observation of climate change and for its impact on the overall Ocean Health. The Speakers will paint a clear picture of the effects of climate change and the actions imperative to reduce human impact in these fragile areas.

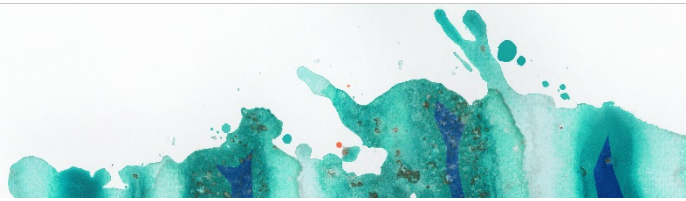
PARALLEL SESSION MONDAY 6: Exploring the Poles – Research to Action Moderator: Julia Farkas, SINTEF Ocean & Geir W. Gabrielsen NPI		
Time	Speaker	Topic
13:30	Geir W. Gabrielsen, Head Environmental pollution section, Norwegian Polar Institute	Microplastics in the Arctic
13:45	Susan Eaton SEDNA EPIC EXPEDITION, Expedition Founder	Opening of the Arctic sea ice Navigating the High Arctic
14:00	Ingrid Ellingsen, Environment and New Resources SINTEF Ocean	Polar ocean circulation
14:15	Chantel Nixon NTNU, Dept. of Geography	Gas hydrates in the Barents Sea
14:30	Emlyn Davies, Environment and New Resources SINTEF Ocean	Monitoring the Arctic
14:45	Pitch session – Nicolas Sanchez, Dept. of Chemistry; Martina Lan Salomon, Dept. Environmental & Civil Engineering; Glauca Moreira Fragoso, Department of Biology	Bi-polar biogeochemistry; Trace metals role in marine life in a changing Arctic and Antarctic ecosystem
15:05 – 15:35	<i>BREAK</i>	
15:35	Liv-Guri Faksness, Environment and New Resources SINTEF Ocean	Oil spills the Arctic -are we prepared?
15:50	Arthur Mason, NTNU Dept. of Social Anthropology	New Arctic: Expressions of Neoliberal Interest in the Wake of Exxon Valdez Oil Spill
16:05	TBA	TBA
16:20	Ida Øverjordet, Environment and New Resources SINTEF Ocean	Pollution - Fat matters
16:30	Bjørn Munro Jensen NTNU, Dept. Biology	Pollutant trends in the Arctic
16:45 – 17:15	Oceans Talks: The Poles and Climate Change – How to communicate and inspire action: <i>Gabrielsen, Irina Rogozhina, Faksness, Ramón Larramendi, Project Leader Inuit Windsled Antarctica expedition</i>	

17:45 – 18:30 OCEAN WEEK AUTONOMOUS SHIP & AUV DEMO
Brattørkaia – Open to the Public – VIP area for OW Participants



Policies and Other Initiatives for a Fragile Living Ocean focuses on the efforts that Industry, Institutions and research make to preserve our fragile Oceans and the knowledge that we need for a better decision-making process for all Ocean related activities.

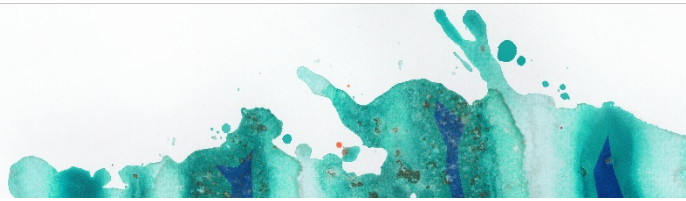
PLENARY SESSION TUESDAY 7: Policies and Other Initiatives for a Fragile Living Ocean Session Chair: Ingrid Schjølberg, Director NTNU Oceans. Nancy Bazilchuk, Scientific Journalist, Communication Division		
Time	Speaker	Topic
<i>Registrations Open 08:00</i>		
09:00	Alan Simcock, Joint Coordinator at UN Group of Experts of the Regular Process (World Ocean Assessment)	"Sustainability for 7/10ths of the planet: the United Nations' First Global Integrated Marine Assessment and the 2030 Sustainability Goals"
09:20	Harald Solberg CEO Norwegian Ship-owners Association	Sustainable Shipping Title TBC
09:35	Bjørn Haugland, CEO Norway203040	Ocean Sustainability Leadership, collaboration & innovation
09:50	Anna Mária Sikó, Ambassador of Hungary	TBA
10:05	Iwona Woicka-Żuławska, Ambassador of the Republic of Poland	Synergy in diversity: Creativity, Safety and Cooperation as pillars of effective Seas and Oceans management
10:20	Richard Thompson, Director of the Marine Institute - University of Plymouth	Marine Litter: are there solutions to this global environmental challenge?
10:35	Ramón Larramendi; Project Leader Inuit Windsled Antarctica expedition	Inuit Windsled Antarctica, a project for the Scientific Research of the Poles Title TBC
<i>10:50-11:00 – Approx. Arrival to Conference Venue of His Majesty King Harald visiting NTNU on May 7 during Ocean Week 2019</i>		
11:00	Ingrid Schjølberg, Director NTNU Oceans	Technology for Sustainable Use of the Oceans
11:10	State Secretary Allan Ellingsen, Ministry of Transport and Communications	TBA
11:20	NTNU Students: Maria G Digernes Brage Sæther	Sailing for Science Milliampere, Autonomous Ships
11:30-11:45	Ocean Talks: Panel Discussions on Research and Education as the Bases for Join International Actions for a Sustainable Ocean. <i>Panelists:</i> Dag Rune Olsen, Rector University of Bergen; Andreea Strachinescu, Directorate General for Energy, EU Commission; Waldemar Coutts, Ambassador of Chile in Oslo; Alexandra Bech Gjørsv, President & CEO SINTEF; Gunnar Bovim, Rector Norwegian University of Science and Technology	



<i>11:45-11:45 His Majesty King Harald Visits Ocean Week Stands</i>		
11:45	Jan-Gunnar Winther, Director Norwegian Centre for the Ocean and the Arctic, NOFIMA & Specialist Director Norwegian Polar Institute	Sustainable Blue Economy in the Norwegian Arctic – a foresight for 2030 and 2050
12:00-12:20	Ocean Talks : <i>Simcock</i> , Joint Coordinator at UN Group of Experts of the Regular Process; <i>Thompson</i> , Director of the Marine Institute - University of Plymouth; <i>Winther</i> , Director Norwegian Centre for the Ocean and the Arctic; <i>Sturla Henriksen</i> - UN Global Action Platform for Sustainable Ocean Business; <i>Susan Eaton</i> SEDNA EPIC EXPEDITION, Expedition Founder	
12:20-12:30	<i>Being Salmon, Being Human – Teaser of the Performance</i>	
LUNCH 12:30-13:30		

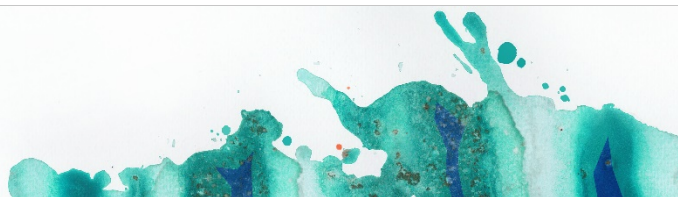
TUESDAY May 7 – AFTERNOON PARALLEL SESSIONS

- 1. Coastal Engineering Crossing Over**
- 2. New Biomarine Value Chains Based on Resources Low in the Food Chain**
- 3. Green Energy Impacts on a Blue Ocean**



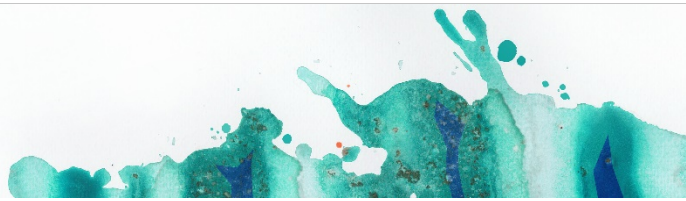
Coastal Engineering Crossing Over focuses on innovation linked to coastal development and the use of coastal resources.

PARALLEL SESSION TUESDAY 7: Coastal Engineering Crossing Over Moderator: Hans Bihs, Dept. Civil and Environmental Engineering		
Time	Speaker	Topic
13:30	Hans Bihs, Dept. Civil and Environmental Engineering	Welcome
13:35	Athul Sasikumar, Norconsult	New Design innovations and Modeling Approaches in Coastal Engineering
13:50	Bruno Sainte-Rose, Lead Computational Modeler at The Ocean Cleanup	Computer models to help clean the oceans
14:05	Kjersti Bruserud, Management assistant/advisor to Chief Technology Officer (CTO) Equinor	Perspectives on technology collaboration for shallow waters
14:20	Nils Goseberg, TU Braunschweig/GWK	The Future of Experiments in Coastal Engineering
14:35	Arun Kamath, NTNU Dept. Civil and Environmental Engineering	Cutting-edge aquaculture structure hydrodynamics - from research to teaching
14:50	Csaba Pakozdi, Sintef Ocean	Future Wave Hydrodynamic Modeling Needs For The Norwegian Offshore Industry
15:05 – 15:35	<i>Break</i>	
15:35	Claes Eskilsson Ålborg University/RISE Göteborg	On the wave energy research and development in Sweden
15:50	Raed Lubbad, NTNU Dept. Civil and Environmental Engineering	Arctic Coastal Engineering
16:05	Marit Reiso, SAP	TBA
16:20	PhD pitch: Civil & Environ. Engineering Tobias Martin; Weizhi Wang; Sungsoo Lim;	Efficient wave modelling cascade for multi-scale coastal hydrodynamics
16:35– 17:00	Ocean Talks	



New Bio Marine Value Chains Based on Resources Low in the Food addresses the potential for establishing new bio marine value chains through exploitation of low-trophic species from the oceans. Solutions on how to develop circular bio economy and produce more food, feed and materials for a growing population will be presented.

PARALLEL SESSION TUESDAY 7: New Biomarine Value Chains Based on Resources Low in the Food Chain Moderator: Berit Løkensgard Strand, NTNU; Aleksander Handå, SINTEF		
Time	Speaker	Topic
13:30	Berit Løkensgard Strand, NTNU; Aleksander Handå, SINTEF	Welcome
13:35	Karl Almås, SINTEF Ocean Seafood Technology	Prospects for new marine value chains
13:50	Lotte Skolem, Aker Biomarin	How to create business value from krill
14:05	Kurt Tande, Calanus	Sustainable harvesting and biorefining of the marine zooplankton Calanus finmarchicus
14:20	Stein Kaartvedt, Dept. of Biosciences University of Oslo	Abundance and distribution of mesopelagic fish
14:35	Hanne Digre, Research Director, SINTEF Ocean AS	Novel technologies for sustainable harvesting and processing of underutilized marine resources
14:50	NN, SpermVital TBC	TBA
15:05 – 15:35	<i>Break</i>	
15:35	Andreas Hagemann, SINTEF Ocean Dept. of Environment and New Resources	Norwegian plankton technology center; New species in aquaculture
15:50	Terje Finstad, NTNU Dept. of Interdisciplinary Studies of Culture	Seaweed as horizon resource in blue imaginaries, Norway 1950s to 2000s?
16:05	Philip D. Rye, AlgiPharma	Seaside to bedside: A pharmaceutical application
16:20	Finn Aachmann NTNU Dept. of Biotechnology	Norwegian seaweed processing platform
16:35	PhD pitch session: Haiqing Wang, Department of Biology Margrethe Gardløf, Dept. of Biotechnology and Food Science	Nutrients from fish sludge Design of marine polymers – Studying alginate epimerases
17:00	Close session	



Green Energy Impacts on a Blue Ocean focuses on what will the development of green energy sources and new technologies mean in terms of the impact that these could have in our Oceans and the development of the blue economy. Our speakers will present the latest developments in energy technology and initiatives for international collaborations.

PARALLEL SESSION TUESDAY 7: Green Energy Impacts on a Blue Ocean		
Time	Speaker	Topic
13:30	Johan Einar Hustad, NTNU Director TSO Energy	NTNU - Research efforts on renewable energy
13:40	Andreea Strachinescu, Head of Unit New Energy Technologies and Innovation in the Directorate General for Energy, European Commission	Innovative investments for Our future Ocean
13:55	Karl Eirik Schjøtt-Pedersen CEO The Norwegian Oil and Gas Association	An Oil and Gas Perspective
14:10	Tor Eldervik, University of Bergen, Geophysical Institute	Energy-Climate Balance, finding the right formula
14:25	Ocean Talks – TBA	
14:40	Bente Pretlove, Program Director, Ocean Space DNV GL Group Technology and Research	Clean shipping for sustainable oceans
14:55	Henriette Undrum, Vice President Technology Management TPD R&T FVC/New Energy Solutions	Offshore Wind- new opportunities in the Ocean Environment
15:10 – 15:35	<i>BREAK</i>	
15:35	Janne Harstad Rasten, Senior Vice President, Head of Products Norway Aker Solutions	Offshore win
15:50	Trond Strømgren, Subsea Innovator at GCE Ocean Technology	Marine energy, hydrogen and zero emission propulsion
16:05	Anders Valland, SINTEF	Reducing Cruises Emissions to World Heritage Fjords
16:20	Elisabetta Tedeschi, NTNU Dept. of Electric Power Engineering	Energy Grids, future of the energy distribution in Europe
16:35 – 17:00	PhD pitch session: Erick Fernando Alves Atousa Elahidoost/Abel A. Taffese Spyridon Chapaloglou Dept. Civil and Environmental Engineering Seok Ki Moon, Dept. of Geoscience and Petroleum	Wind turbines in O&G platforms Offshore electrical grids TBA TBA TBA TBA

17:00 – 17:30 After Sessions Reception and Mingling with Oceans' Jazz: JUNO in collaboration with Trondheim Jazz Festival
17:30 – 19:00 Being Salmon, Being Human – The Performance
Radisson Blu Royal Garden - Ocean Week 2019



WEDNESDAY May 8 – ALL DAY PARALLEL SESSIONS

1. Life Cycle Thinking in Deep-Sea mining
2. Aquaculture in Society – How to Match the UN SDGs?
3. Ocean Health
4. Autonomous Ships

Life Cycle Thinking in Deep-Sea mining focuses on the interrelationship between deep-sea mining and sustainability. Our speakers will try to answer question as: Can deep-sea resources contribute to sustainable *development*, and how do we make deep-sea mining sustainable? How life cycle thinking can contribute to sustainable deep-sea mining? Generally applied in support of technology development and environmental management, life cycle thinking also forms the basis for environmental legislation in Europe and Norway. Deep-sea mining in Norwegian and international waters will occur in harsh conditions, where Arctic marine operations and offshore oil and gas provide highly relevant experience. Our speakers bring together experience in life cycle thinking in legislation as well as offshore and mining industries.

PARALLEL SESSION WEDNESDAY 8: Life Cycle Thinking in Deep-Sea Mining		
Time	Speaker	Topic
<i>Registration Open 08:00</i>		
09:00	Steinar Løve Ellefmo, NTNU	Introduction. UN Sustainable Development Goals and Deep Sea Mining
Can deep-sea resources contribute to sustainable development?		
09:10	Donald Singer, Consultant, Resource geologist	Future Copper Supplies
09:35	Johan Berg Pettersen, Dept. of Energy and Process Engineering	Life cycle thinking in industrial development
09:55	Daniel Müller, Dept. of Energy and Process Engineering	Circular Economy - Metals in society, stocks and flows
10:15	<i>Break</i>	
10:45	Heidi R. Nilsen, Dept. Philosophy & Religious Studies	Crossing the planetary boundaries. Consequences for sustainability and DSM?
11:05	Tom Heldal, Researcher NGU	Metals for the society (title to be confirmed)
11:25	PhD pitching session: Aravinda Perera, Dept. of Electric Power Engineering NTNU Dmitry Shcherbin, Dept. of Chemistry NTNU Espen Dyrnes Stabell, Dept. of Philosophy and Religious Studies NTNU	Reliable motor drives, the key to sustainable mining Where's the plume gone? The need for minerals
11:35	Ocean Talks (panel): Can deep-sea resources contribute to sustainable development?	
12:00	<i>LUNCH</i>	
What is a sustainable deep-sea mining value-chain?		

PROGRAM
WEDNESDAY MAY 8 -TRONDHEIM



13:00	Stephen Northey, Dept. of Civil Engineering Monash University	A life cycle perspective on the trade-offs between land and deep sea resource extraction
13:20	John Eirik Paulsen, Vår energi	Experiences from implementing life cycle management in offshore drilling operations
13:40	Paul Midford, Dept. of Sociology and Political Science	East Asian Maritime Conflicts and UNCLOS: Can Japan's Deep Sea Mining Be Sustainable?
14:00	Renee Grogan, Gro Sustainability Pty Ltd	Sustainable deep sea mining. A contradiction in terms?
14:20	Rolf Arne Kleiv, Dept. of Geoscience and Petroleum	Classification of DSM processing concepts as a tool for Environmental Impact Assessment
14:40	<i>Break</i>	
15:10	Francesca Verones and John Woods, Dept. of Energy and Process Engineering	Understanding the ecological consequences of deep sea mining
15:30	Jens Laugesen, Chief Specialist Environment, DNV GL	Risk assessment methods for deep sea mining
15:50 – 16:20	Ocean Talks (panel): Can the deep-sea mining value-chain be sustainable?	



Aquaculture in Society – How to Match the UN SDGs? Aquaculture is an important contributor towards the achievement of many of the SDGs defined by the UN. During this session, researchers, PhD students and experts from the sector will present technologies, insights and potential solutions for a sustainable development of the aquaculture industry and of the coastal societies that largely depend on it. Its focus will be on five of the major development goals of relevance to producing food from the oceans.

PARALLEL SESSION WEDNESDAY 8: Aquaculture in Society – How to Match the UN SDGs?		
Time	Speaker	Topic
08:45		
GOAL 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture GOAL 3: Ensure healthy lives and promote well-being for all at all ages		
09:00	Welcome by Eva Falch, Vice Dean, Education & Innovation NTNU Faculty of Natural Sciences	
09:05	Waldemar Coutts Ambassador of Chile in Oslo	Sustainability efforts by the Chilean Salmon Industry
09:15	António Quinteiro Nobre Ambassador of Portugal in Oslo	Aquaculture in an international perspective Title TBC
09:25	Ragnar Tveteraas, University of Stavanger (UiS)	Aquaculture as an active contributor to reaching the UN SDGs
GOAL 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation		
09:50	Hans Bjelland, Seafood Technology SINTEF Ocean	Novel aquaculture production systems in the coastal zone
10:05	Eivind Dale, DNV-GL	Sustainable logistics– results from a pilot study
10:20	<i>Coffee Break</i>	
10:45	Martin Føre, NTNU AMOS	Aquaculture cybernetics – increasing the control in fish production through improved precision and new technologies
11:00	Rune Vilhelmsen, Business Manager Smart Aquaculture at Telenor TBA	Communication in Aquaculture
11:15	Maria Bergvik, Planktonic	Innovative feed solutions in a global market
11:30	PhD pitching session: Hans Tobias Slette, EXPOSED; Tale Skrove, Dept. of Biology; Kristbjörg Edda Jónsdóttir, Dept. of Engineering Cybernetics	TBA
11:45	Student innovation: Artifish, Fitfish	TBA
12:00	<i>LUNCH</i>	
GOAL 12: Ensure sustainable consumption and production patterns		
13:00	Anette Grøttland Zimowski, Norwegian Seafood Council	Brand building and mythbusting – communicating sustainable Norwegian aquaculture across the world



13:15	Helen Ann Hamilton, NTNU Dept. of Energy & Process Engineering	Aquaculture's footprint: research tools and methods – globally
13:30	Anne Hilde Middtveit, Lerøy Seafood Group	World's best protein producer from a sustainability perspective
13:45	Shraddha Mehta, SINTEF Ocean	The environmental footprint of seafood production
14:00	PhD pitching session: Vilde Steiro Amundsen, Social Anthropology; Inka Seekamp; Siv Anina Etter; Frank Thomas Mlingi, Dept. of Biology	Navigating through a sea of indicators: The impression, implementation and impact of sustainability certification for aquaculture.
14:20	Ocean Talks - Moderator Kjell Inge Reitan & Alexandra Neyts	
14:40	<i>Coffee Break</i>	
GOAL 11: Make cities and human settlements inclusive, safe, resilient and sustainable		
15:10	Svein Johan Frisvol, Research Manager Ruralis	Aquaculture and its need for social legitimacy
15:25	Marit Kvernmo, BDO Norway	Smart Cities in a global setting of sustainability
15:40	Morten Volden, Rådmann Trondheim Municipality	TBA
16:00	<i>Close and Walk to boat terminal (Brattørkaia)</i>	

The Norwegian Salmon Industry started off at the islands of Hitra & Frøya.

The Mid-Norwegian region is still one of the most productive areas in Norway, thanks to very suitable natural conditions and to people with entrepreneurial capacities. Innovative solutions and disruptive technologies are being rapidly implemented in aquaculture farms and hence contribute to tackle the challenges on the sector. Participants at the excursion will get the chance to visit a state-of-the-art salmon cage farm at sea and a fish processing plant. The latter was established only in 2018 and has taken into use a variety of automated systems along the processing chain.

Join us for a visit to the idyllic islands! Enjoy its unique seafood, meet the local business people, and feel the touch of aquaculture out on a sea cage.

ADDITIONAL PROGRAM AQUACULTURE HITRA FRØYA – Evening May 8 - May 9	
Program	Content
May 8	16:30 – Departure from Trondheim by boat
	19:30 – Dinner at the hotel in Frøya, Sistranda
May 9	08:30 – Aquaculture Site excursion - Visit to a sea-based salmon production unit and to a salmon processing plant
	15:30 – Arrival in Trondheim



Ocean Health focuses on the changes faced by our Oceans due to climate change. How could humans reach a better understanding on how to interact with the Oceans without leaving a negative environmental print? Can we help restore the Ocean health? What steps should we take the coming years and how can research help.

PARALLEL SESSION WEDNESDAY 8: Ocean Health		
Time	Speaker	Topic
08:45		
09:00	Mimmi Throne-Holst, SINTEF Ocean	Introduction
09:15	Nina Jensen CEO RevOcean	Ocean Health – Challenges and Solutions
Climate Change and Ocean Health		
09:45	Helene Muri, NTNU Industrial Ecology Programme. Dept. of Energy and Process Engineering	Expected changes to oceans and ocean health, according to the IPCC Special Report on global warming of 1.5C
10:00	Anne Deininger, University of Agder	Coastal Darkening – How does this affect ocean health?
10:10	<i>Coffee Break</i>	
Legacy Contaminants		
10:45	Murat van Ardelan, NTNU	Contaminants, when and where?
11:00	Marianne Olsen, Senior Research Scientist NIVA Norwegian Institute for Water research	Legacy mercury contaminated seabeds: should we take remediation action or not?
11:15	Alexandros Asimakopoulos, NTNU Department of Chemistry	Legacy POP's: A Cocktail Challenge
11:30	PhD pitching session: Annie Vera Hunnestad, Dept. of Chemistry; Mathew Kuttivadakkethil Avarachen, Dept. of Biology; Stian Løkken Myrvold, Dept. of Biology	TBA It's not easy being green - the struggles of cyanobacteria in an ever changing ocean
11:45	Ocean Talks - Q&A session with the speakers and teaser for to the next topic	
12:00	Lunch	
Plastic in the Ocean		
13:00	Kristine Berg, Circular Economy Advisor, TOMRA Collection Solutions	eXXpedition: Sailing through the Great Pacific Garbage Patch
13:15	Martin Wagner, NTNU	Risk to all or non - on the impacts of plastic pollution on the environment and societies
13:30	Andy Booth , SINTEF Ocean	Microfibre: How dangerous are your clothes to the ocean?

PROGRAM
WEDNESDAY MAY 8 -TRONDHEIM

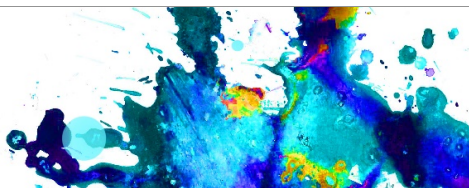


13:45	Erlend Standal, SALT	Fishing for Litter
14:00	Susie Jahren, SINTEF Industry, Materials and Nanotechnology	How do we solve our plastic problem?
14:15	Ocean Talks - Q&A session with the speakers and teaser for to the next topic Ocean Talks	
14:30	<i>Coffee Break</i>	
15:00	Lisbet Sørensen, SINTEF	Plastics in the environment - a sink, source or vector for emerging pollutants
15:15	Fredrik Myhre, Senior advisor, Fisheries & Ocean Environment WWF	The Importance of a Healthy Ocean
15:45/16	Ocean Talks - Q&A session with the speakers and Concluding remarks	



Autonomous Ships focuses on the challenges of research and the innovation of new concepts and methods which will enable the development of autonomous methods of transport for people in urban water channels. This technology can be transformative both technologically, societally and in terms of new business opportunities.

PARALLEL SESSION WEDNESDAY 8: Autonomous Ships		
Time	Speaker	Topic
08:30		
09:00	Morten Breivik, NTNU, Dept. of Engineering Cybernetics	Autonomous ships: An ocean of opportunities
09:20	John Vigrestad, RCN Dept. Director Business & Technology, Dept. Transport & Maritime	Maritim21, Research on Autonomous Ships
09:50	Bjørn-Olav Holtung Eriksen & Erik Wilthil NTNU Dept. of Engineering Cybernetics	Collision Avoidance for Autonomous Surface Vehicles
10:10	<i>Coffee Break</i>	
10:30	Thomas Porathe, NTNU Dept. of Design	Autonomous Ships and Human Interaction
10:50	Patrick Waldermar, Vice President Telenor Research	5G digitizing societies: autonomous ships and smart ports
11:10	Roy Nilsen, NTNU Dept. of Electric Power Engineering	Innovative hybrid and battery powered ships
11:20	Øyvind Smogeli, DNV GL Group Technology and Research, Digital Assurance program	Testing and verification of autonomous navigation systems
11:50	Nils Haktor Bua, Norwegian Maritime Authority	Autonomous ships - regulating a fast changing sector
12:10	Lunch	
13:00	Kjetil Fagerholt, Dept. of Industrial Economics and Technology Management	Can Norwegian coastal shipping become more cost-efficient from using autonomous vessels
13:20	Anders Strømman, Industrial Ecology Programme, NTNU	Sustainability
13:40	Erlend Solem, Trøndelag county council	How a county may be an accelerator for autonomous ships
14:00	Vegard Evjen Hovstein, Maritime Robotics	Autonomous personnel transportation at sea - the pathway to realization?
14:20	Øystein Utbjoe Andersland, Vortex; Kristian Sandaa, Ascend; NTNU	Vortex and Ascend - student driven projects which includes autonomy
14:40	<i>Coffee Break</i>	
15:00	Beate Kvamstad Lervold, SINTEF Ocean	E39 and autonomous ferries
15:20	Jon Herman Ulvensøen, University of South-Eastern Norway	Risk analyses related to the small passenger ferry "Ole 3"
15:40	Ingrid Utne, NTNU Dept. of Marine Technology	TBA
16:00	Close of Session	



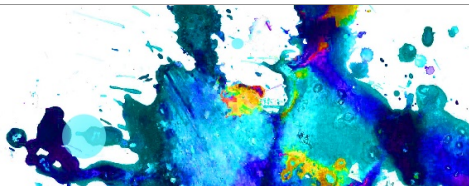
OCEAN WEEK 2019 – Ålesund – THURSDAY May 9

LOCATION: Campus Ålesund, different locations depending on the Session:

- **Our Blue Vision**
Location: Norsk Maritimt Kompetansesenter, Borgundveien 340, 6009 in Ålesund
- **Blue Proteins: Towards a Sustainable Use of Marine Resources**
Location: Naftadjupe Auditorium, NTNU Campus in Ålesund
- **Safe, Clean and Efficient Exploration of Ocean Resources, Through Low Emission Solutions and Advanced Simulation Technologies**
Location: Brosundet Auditorium, NTNU Campus in Ålesund

Our Blue Vision What is our vision for sustainable oceans and how can technology and decision-support tools help make the right choices?

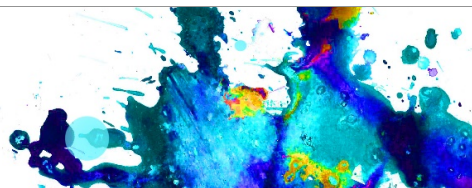
PLENARY SESSION THURSDAY MAY 9: Our Blue Vision		
Conference Chair, Moderator: Annik Magerholm Fet		
Time	Speaker	Topic
08:30	Registration	
09:30	Annik Magerholm Fet, Vice-Rector NTNU in Ålesund Ingrid Schjølberg, Vice-Dean Research NTNU Engineering Faculty, Director NTNU Oceans	Welcome at NTNU Ålesund – Ocean Week 2019 NTNU Oceans – Oceans Research
09:40	Sveinung Rotevatn, State Secretary for Climate and the Environment	Opportunities in a Sustainable Ocean Economy
10:00	Thina Saltvedt, Chief Analyst, Nordea	Can Green Finance Save the Ocean?
10:15	Kongsberg Maritime (name to be announced)	Can Technology Save the Ocean?
10:30	Greenpeace Maritime (name to be announced)	TBA
10:45	Bergljot Landstad, Regional og nærings sjef Møre og Romsdal	Ocean Strategies and the Region's Blue Future
11:00	Ocean Talks: Ocean sustainability, what does it mean for the maritime and marine industry? <i>Fet, Rotevatn, Saltvedt, Bovim; Anna Mária Sikó, Ambassador of Hungary</i>	
11:30	Gunnar Bovim, NTNU Rector	Ocean Week 2019, NTNU's Networking Strategic Pillar for new Oceans Activities
11:40	<i>LUNCH Cultural Performance from Sunmøre</i>	



AFTERNOON PARALLEL SESSIONS

Blue Proteins: Towards a Sustainable Use of Marine Resources What is the key to a sustainable use of fish and other marine life? New species are being coveted for food, pharmaceuticals and cosmetics. Advances in biotechnology are laying the foundation for the use of residual raw materials. Is a marine food system with no waste possible?

PARALLEL SESSION THURSDAY MAY 9		
Blue Proteins: Towards a Sustainable Use of Marine Resources		
Brosundet Naftadjupet Auditorium NTNU Ålesund - Moderator: Ann-Kristin Tveten		
Time	Speaker	Topic
12:30	Ann-Kristin Tveten, Research Coordinator Institute for Biological Sciences	Introduction and Welcome
12:40	Ana Carvajal – Sintef Ocean	Overview of research in the area of blue Proteins
13:10	Grete Hansen Aas, NTNU	From residual material to human consumption
13:25	Miroslava Atanasova, Møreforskning	Alternative and Emerging Protein & Bioactives Sources with Special Focus on Sea Cucumbers and Insects
13:45	Inge Bruheim, Rimfrost	Krill as a source of marine protein
14:10	<i>BREAK</i>	
14:40	Ola Ween, Møreforskning	Latest development in fishmeal
15:00	Margrethe Lundevold Norland, Plarva Solution	Plastic-eating larvae
15:10	Kristine Kvangarsnes, Dept. of Biological Sciences Ålesund	TBA
15:20	Oceans Talks – Wrap-up	
16:00h-19h	Activities in common Tour around simulators, Food, Pitch session for student companies etc.	



Safe, Clean and Efficient Exploration of Ocean Resources, Through Low Emission Solutions and Advanced Simulation Technologies In this session we will explore the maritime sector of the future. How will a Hydrogen society look like? What opportunities lie in offshore wind? How can we use simulation technology to optimize operations? In the last hour we will delve into in-house research, with a special focus on advanced simulation technology.

PARALLEL SESSION THURSDAY MAY 9		
Safe, Clean and Efficient Exploration of Ocean Resources, Through Low Emission Solutions and Advanced Simulation Technologies		
Brosundet Auditorium NTNU Ålesund - Moderator: Hans Petter Hildre		
Time	Speaker	Topic
12:30	Hans Petter Hildre, Head of Department Ocean Operations and Civil Engineering	Introduction
12:40	Jørn Helge Dahl, Hexagon	The Hydrogen Society
13:05	Jan Kvålsvold, DNV-GL	Energy Transition Outlook towards 2050 – what could it mean for shipping
13:30	Joel Mills, Offshore Simulation Centre	Simulation as a tool for Operation planning
13:45	John M. Lervik, Cognite	Data Liberation: Breaking the barrier between sea and land
14:10	<i>BREAK</i>	
14:40	Niels Henrik Mortensen, Technical University of Denmark, DTU	Large scale service and maintenance of ocean installations
Ocean research at NTNU in Ålesund - Pitch session		
14:50	Hans Petter Hildre, Head of Dept. Ocean Operations and Civil Engineering	Møre Ocean Lab - Ocean research at NTNU in Ålesund
	Karl Henning Halse, Dept. Ocean Operations and Civil Engineering	Simulation of critical marine operations, SFI Move
	Houxiang Zhang, Dept. Ocean Operations and Civil Engineering	Digital Twins Ship, the Gunnerus Case
	Dina M. Aspen, Dept. Industrial Economics and Technology Management	Decision-Support for Sustainable Oceans
	Vilmar Æsøy, Dept. Ocean Operations and Civil Engineering	Data analytics for decision support – machine learning
16.05h	Activities in common Tour around simulators, Food, Pitch session for student companies etc.	