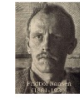




All-Russian non-governmental organization
RUSSIAN GEOGRAPHICAL SOCIETY
Founded in 1845



Nansen
Scientific
Society

The Arctic Ocean and the marginal ice zone (MIZ). Interdisciplinary research, management practices and policy developments.

**An interdisciplinary PhD and Post-Doc summer school in Longyearbyen, Svalbard
31 July - 6 August 2017**

Introduction

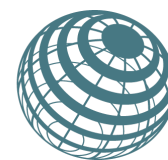
The consequences of climate change are particularly evident in the Arctic. In recent years, we have witnessed significant changes and reductions in Arctic sea ice distribution and volume. Seized as an opportunity, plans are being made for expansion of economic activities such as shipping, fisheries, petroleum extraction and deep-sea mining. Changes in ice cover and distribution will have consequences for national and international management regimes.

This new situation represents challenges for scientists, managers and policy makers and for the private sector. More and better communication between different parts is required, and the best way forward needs to be further developed for sound management and sustainable use of the Arctic oceans' vast renewable and non-renewable resources.

The international summer school in Longyearbyen, Svalbard 2017 will have a multi- and cross-disciplinary thematic approach to meet challenges and opportunities related to governance of the Arctic Ocean's marginal ice zone. The summer school is hosted by the Norwegian Scientific Academy for Polar Research (NVP), in cooperation with the University Centre in Svalbard (UNIS), UiT – the Arctic University of Norway, the Nord University, the Norwegian Polar Institute (NPI), Akvaplan-niva, the Nansen Environmental and Remote Sensing Center (NERSC), the Nansen Scientific Society and the Russian Geographical Society (RGS). Scientists and experts from Norway and abroad will contribute with lectures and with interactive student and teacher sessions. The participating students will be challenged to start drafting a peer-reviewed publication for an international journal.

Summer school coordinators:

- Professor Willy Østrem; the Norwegian Scientific Academy for Polar research (NVP)
- Lasse H. Pettersson; Director for International Cooperation and Marketing, the Nansen Environmental and Remote Sensing Center (NERSC)
- Jorge Kristiansen; Office Manager, the Norwegian Scientific Academy for Polar research (NVP)



Saturday 29th July: Arrival in Longyearbyen Group 1, transport to Nybyen/UNIS

20.20	SK4494 arrival at LYR - Group 1
20.50	Bus to Nybyen and UNIS Guesthouse. Check in at accommodation.

Sunday 30th July – Registration; Location: UNIS - Kapp Wijk

09.30-11.00:	Group 1 – Orientation / Registration at UNIS – the University Centre in Svalbard (≈3 km from Nybyen, individual walk) - Breakfast – UNIS Kapp Wijk
--------------	--

Monday 31th July, Arrival in Longyearbyen Group 2, transport to Nybyen/UNIS

00.30	SK4496 arrival at LYR - Group 2
01.00	Bus to Nybyen and UNIS Guesthouse. Check in at accommodation.

Monday 31th July, Location: UNIS Lassegrotta / Kapp Wijk

[Session 1: Introducing NVP and the Summer School 2017.](#)

[Session chair: Lasse H. Pettersson, Director for International Cooperation and Marketing/NERSC.](#)

08.30-09.00:	Group 2 - Orientation / Registration at UNIS – the University Centre in Svalbard (≈3 km from Nybyen, individual walk)	
09.00-09.30	Breakfast – UNIS Cantina	
09.30-10.10	Welcome and brief information about the NVP President Dr. Anton G. Kjelaas, NVP Organization of the summer school, interdisciplinary approach, and group work. Lasse H. Pettersson, NERSC	
10.10-11.00	Student life at UNIS & Safety briefing: Security and risk in Svalbard. TBA - UNIS	
11.00-12.00	Lunch – UNIS Cantina	
12.00-14.10	Presentation of the lecturers (2 min) and student participants - (10 min. per person including questions) – presentation - Relevant studies and the relation to the summer school topics.	
	1. Values of the MIZ (6)	2. Vulnerability of the MIZ (6)
	Marius Årthun – <i>Climate predictions.</i>	Bernhard Schartmüller - <i>Underwater hyperspectral imaging – Light and algae growth under arctic sea ice.</i>
	Elena Sukhikh - <i>Water temperature variability in northern part of the Barents-Kara region and its influence on geothermal measurements results.</i>	Hanna Kauko - <i>Windows in Arctic sea ice: optical and biological studies of a refrozen lead.</i>
	Anastasia Korablina - <i>Storm surges in the White and Barents Seas: formation, statistics, analysis.</i>	Robynne Nowicki - <i>The effects of UV-B radiation on the physiology and biochemical composition of Arctic phytoplankton.</i>



	Charles Brunette - <i>Regional and seasonal forecasts of sea ice in the Arctic Ocean.</i>	Anastasiia Baxhenova - <i>Risk's concentrate zones on the Arctic and Far East Seas.</i>
	Anastasiia Mishchenko - <i>Ecogeochemistry mapping heavy metals and toxical elements in the bottom sediments of the deep central part of Barents Sea.</i>	Thomas Ronge - <i>(Ant)arctic affairs.</i>
	Lisa Griem - <i>Ocean circulation changes off southern Greenland during the abrupt climate events of mid-to-late MIS 3</i>	Liudmila Nikanorova - <i>How climate change affects religious practises of indigenous people?</i>
14.10-14:30	Coffee break – UNIS Cantina	
14:30-17:00	3. Exploitation of the MIZ (6)	4. Management & Regulations (5)
	Alix Varnajot - <i>Arctic tourism development: limits to growth in nature-based tourism – case Iceland and Svalbard.</i>	Diwarka Poudel - <i>Managing variable environmental values in the Arctic marginal ice zone, sea ice zone, and polar front.</i>
	Elena Guk - <i>Modeling tourist and recreational system for Norilsk region.</i>	Meri Korhonen - <i>Hydrography of the Arctic Ocean.</i>
	Marta Bystrowska - <i>Cruise tourism in Svalbard: development imperatives.</i>	Kari Dalen - <i>Enabling smart and green energy solutions while maintaining security of supply.</i>
	Sigurd Teigen - <i>Metocean and Arctic Design.</i>	Ilker Basaran – <i>Law and Arctic Shipping Governance.</i>
	Bimochan Niraula - <i>Partitioning of Ocean Heat between the Fram Strait and Barents Sea Opening.</i>	Marina Antonova - <i>International law on the black carbon mitigation in the Arctic.</i>
	David Palma - <i>SINet: Software-defined Intermittent Networking.</i>	
17.00-18.00	Dinner – UNIS Cantina	
18:00-19:30	Group work: Establishment of student groups	



Tuesday 1st August, Location - NVP Academy – Isdammen

Session 2: Framing the course and introducing the lectures.

Session chair: Professor Phil Steinberg, Durham University.

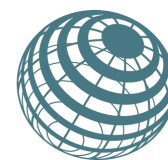
08:30	<i>Bus from NyByen to UNIS to Isdammen</i>
09.00-09.50	The Marginal Ice Zone: Variability and future projection - A brief review. Prof. Ola M. Johannessen, Nansen Scientific Society.
09.50-10.30	Inter-and transdisciplinarity in polar research: Why? Listen to others and understand others. Prof. Willy Østreg, NVP
10.30-10.45	Coffee break
10.45-11.30	Politics and Imaginaries in the Circumpolar North. Prof. Phil Steinberg, Durham University.
11.30 – 12.20	Satellite observation of sea ice - a key to safe operations in the marginal ice zone. Prof. Stein Sandven, NERSC
12.30-13.30	Lunch - Isdammen
13.30-15:30	Group preparations of questions (30 min) Plenary questions from students and discussion with the lecturers.
15.30-17.00	Group work: Preparations of students' reports and presentations for use in peer review article. Plenary discussion among the groups.
17:00-17:30	Walk to UNIS
17.30-18.30	Dinner – UNIS Cantina
18:30-19:00	<i>A sense of adventure – The Life of Fridtjof Nansen</i>



Wednesday 2nd August, Location: UNIS – Lassegrotta

Session 3: Marginal Ice Zone Management and Policy Challenges in an international policy context. Session Chair: Professor Dr. Denis Alexeev, Russian State Hydrometeorological University.

09.00-09.40:	The MIZ in the context of the terror balance. Prof. Willy Østrem, NVP
09.40-10.30	Navigating the Arctic and a changing MIZ. Prof. Scott Stephenson, University of Connecticut.
10:30-10:50	Coffee break
10.50-11.40	Russia's foreign and security policy with reference to a changing Arctic and the MIZ. Prof. Dr. Nikita Lomagin, the European University at St. Petersburg.
11.40-12:30	Slippery Ice: Mapping and Knowing the Polar Environment. Prof. Phil Steinberg, Durham University
12.30-13.20	Lunch
13:20-14:10	Future industry development and sea transportation in the Arctic. Prof. Odd Jarl Borch, Nord University
14.10-14:40	Climate variability and change in the Eurasian Arctic, a Norwegian-Russian Project-CLIMARC NORRUSS. Prof. Ola M. Johannessen, Nansen Scientific Society.
14.40-17:30	Group preparations of questions (30 min) Plenary questions from students and discussion with the lecturers (60 min). Group work: Preparations of students' reports and presentations for use in peer review article (30 min).
17.30-18.30	Dinner – UNIS Cantina
18.30-19.30	Public lecture at UNIS-Lassegrotta GoNorth – Geosciences in the northern Arctic – a national research initiative. Prof. Matthias Forwick (UiT)



Thursday 3rd August. Location: UNIS – Lassegrotta

Session 4: Marginal Ice Zone Management and Policy Challenges. Local, National and International Management contexts.

Session Chair: Professor Dr. Nikita Lomagin, the European University at St. Petersburg.

08.45-10.00	The local perspective from Longyearbyen: Challenges and opportunities for sustainable development as a result of the increasing activity in the Arctic. Discussion panel: <ul style="list-style-type: none"> • Terje Aunevik, Svalbard’s Chamber of Commerce • Merete Nordheim, Basecamp Spitsbergen • Ronny Bruvoll, Visit Svalbard Moderator: Dr. Anton G. Kjelaas, NVP
10.00-10.30	Ice Matters: Plans and Probabilities in the Barents Sea. Prof. Phil Steinberg, Durham University.
10.30-10.40	Coffee break
10.40-11.30	The governance of the Arctic and the MIZ as an Object of Regulation. Prof. Willy Østreng, NVP
11.30-12.15	Russian perspectives on international cooperation related to a changing Arctic and the MIZ. Prof. Dr. Nikita Lomagin, the European University at St. Petersburg.
12.15 – 13.00	Group preparations of questions Plenary questions from students and discussion with the lecturers.
13.00 - 13.30	Lunch – UNIS Cantina
13.30-14:20	Shipping on the Northern Sea Route: Legal and jurisdictional issues, icebreaking, commercial outlook and drivers, Asian interest in NSR, alternative transportation corridors. Arild Moe, Senior Research Fellow - The Fridtjof Nansen Institute.
14.30-16:30	Visit to SvalSat
17.00-17.30	Dinner – UNIS Cantina
17:30-18.30	Group work: Preparations of students’ reports and presentations for use in peer review article.
18.30-19.30	Public lecture at UNIS-Lassegrotta Canadian Arctic Policy – A Careful Balance. Bob Paquin; Director - Canadian International Arctic Centre



Friday 4th August, Location: UNIS – Lassegrotta

Session 5: Marginal Ice Zone Management and Policy Challenges, continued. National and International Management contexts.

Session chair: Professor Willy Østreg, NVP.

09.00-09.50:	Monitoring and forecasting of the MIZ. Lasse H Pettersson, Director International Cooperation - NERSC
09.50-10.40	Consequences of MIZ expansion for the Barents Sea ecosystem. Prof. Paul Renaud, Adjunct professor - UNIS and Senior Scientist - Akvaplan Niva.
10.40-11:00	Coffee break
11.00-12.00	The MIZ in the context of Arctic marine ecosystems and ecological sustainability. Prof. Dr. Denis Alexeev, Russian State Hydrometeorological University, St. Petersburg
12.00-12.30	Lunch
12.30-13.00	The Ice Edge and Oil Exploration. Dr. Anton G. Kjelaas, NVP
13:00-13:30	Arctic Safety Centre UNIS. Ann-Christin Auestad, UNIS
13.30-14.45	Group preparations of questions (15 min) Plenary questions from students and discussion with the lecturers.
14.45 -18.00	Group work: Preparations of students' reports and presentations for use in peer review article.
18:00	Dinner – UNIS Cantina



Saturday 5th August. Location: UNIS / Isdammen

08:30-11:00	UNIS Kapp Wijk - Group work: Preparations of students' reports and presentations for use in peer review interdisciplinary article.
11.00-16:00	Outdoor: Hike around Longyearbyen Starting point: UNIS
16:00 – 20:00	Dinner: Summer BBQ – Isdammen (Outdoor)

Sunday 6th August; Location: UNIS – Lassegrotta

[Session 6 - Reporting and conclusions](#)

[Session chair: Lasse H. Pettersson, NERSC](#)

[Moderators: Prof. Willy Østreng, Dr. Anton G. Kjelaas.](#)

08:30 - 12.00	Reporting, discussion and schedule for finalizing the report/paper from the summer school.
---------------	---

Departures

13:00	Departure Group 1 - Buss from UNIS to LYR airport for departure.
14:45	Flight SK4425 LYR-TOS-OSL, scheduled arrival in Oslo @ 1900.
	Monday 07.08.17
01:00	Departure Group 2 - Buss from UGH and Nybyen to LYR airport for departure.
02:30	Flight SK4497 LYR-TOS-OSL, scheduled arrival in Oslo @ 05.30.