



# Arctic Science Summit Week 2021

19-26 March | Online, Portugal

*Theme G: Living in The Arctic*

Detailed session program



## **ID:08 - Arctic Engineering – Research Supporting a Better Life in the Cold Living in The Arctic**

24 March 2021 | 19:00 - 21:00 GMT | Room F

### **Conveners:**

Alevtina Evgrafova | Leibniz Centre for Agricultural Landscape Research, Germany  
Hajime Yamaguchi | University of Tokyo, Japan  
Anne Barker | National Research Council Canada, Canada

This interdisciplinary R&D session focuses on the importance of engineering research in the Arctic to enable a higher quality of life and sustainable, low impact development. This is especially important in the context of a changing climate, where impacts of changes should be examined in the context of environmental risks, their minimization, as well as any potential benefits. The session highlights research that examines infrastructure development in the Arctic, particularly, the intersection of climate and sea ice prediction models, sustainable development practices and indigenous community needs. As marine transportation is such a vital supply link for many Northern communities, combined with the impacts of shipping routes opening to increased fishing, tourism and cargo, research examining the associated risks and benefits will also be discussed. We cordially invite engineers, researchers, policy makers, business developers, and indigenous peoples' representatives.

### **24 March 2021 | 19:00 - 21:00 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
19:00	Introduction by the conveners	
19:05	Investigating Longyearbyen's local granular material as a low impact solution for the construction industry	Jean-Gabriel Dorval
19:20	Operation of the temperature regime of soils in the urbanized territories of the Arctic	Valery Grebenets
19:35	Drinking water quality in northern villages in Nunavik	Stephanie Guilherme
19:50	Evaluation of access to safe drinking water in Greenlandic settlements	Judith Maréchal
20:05	Affordability of Arctic electricity – An analysis of the dynamic cost behavior	Magnus de Witt
20:20	Hull Form Optimization of an Icebreaker for Minimizing Resistance in Ice	Keisuke Anzai
20:35	Open discussion on orals and posters	

**E-Posters | View in the conference platform and discussion in the session**

	Title	Presenting author
	2D Calculation of Ship Maneuvering Control in Ice-covered Water	Junji Sawamura
	Trends and Perspectives on Arctic Shipping Potential from Scientific Research	Chathumi Ayanthi Kavirathna
	Development and use of visualization tools for Arctic products	Hironori Yabuki
	Geography of cryogenic processes hazardous to infrastructure in the Russian Arctic	Alexander Kizyakov
	Engineering research for resilient arctic infrastructure	Anne Barker

## **ID:18 - Adapting to Climate: People and Buildings in Extremely Cold Regions**

Living in The Arctic

25 March 2021 | 11:30 - 13:30 GMT | Room F

25 March 2021 | 15:30 - 17:30 GMT | Room F

### **Conveners:**

Susan Roaf | Architectural Engineering, Heriot Watt University

Wouter van Market Lichtenbelt | Thermophysiology & Metabolism, Maastricht University

This session will accept papers on two aspects of adapting to life in Arctic regions dealing with issues of both human and architectural living conditions: Papers will be invited that cover:

- Thermo-physiological and behavioural adaptation to extremely cold climates
- Building design issues, challenges and lessons on the form, orientation and structures
- Building material challenges identified and mitigated against in extreme cold
- People, buildings and environment interfaces and impacts.

Building on current field work undertaken in extremely cold regions, this session is proposed to address the need for new and clearer understandings of the physical, behavioural and physiological means with which people can adapt themselves, and their environments, to occupy extremely cold regions with minimal impacts on their environments and themselves.

### **25 March 2021 | 11:30 - 13:30 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
11:30	Introduction by the conveners	
11:35	Weather, climate and human health in the Arctic	Elena Grigorieva
11:50	The Sami hut – from life saver to symbol of assimilation	Peter Sköld
12:05	Thermal adaptation of buildings and people in Himalayan region of Nepal	Hom B. Rijal
12:20	Performance of traditional nomadic yurts for living in extremes	Dolaana Khovalyg
12:35	Traditional living in extremes: Thermoregulation, energy expenditure and physical activity of nomadic pastoralists	Wouter van Marken Lichtenbelt
12:50	Historical advances in cold weather clothing: case study on clothing of early 20th century explorers, Robert F. Scott, Roald Amundsen, & George Mallory	Professor George Havenith
13:05	Open discussion on orals and posters	

**25 March 2021 | 15:30 - 17:30 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
15:30	Introduction by the conveners	
15:35	Humanization of the Built Environment: City in the Arctic versus City for the Arctic (The Case of Western Siberia, Russia)	Sofia Prokopova
15:50	Societal changes reflected in the Greenlandic building style	Eva B. Møller
16:05	New Antarctic Architecture	Hugh Broughton
16:20	Adapting Buildings for Cold Climate Extremes	Susan Roaf
16:35	Forecasting of permafrost thawing consequences for buildings and structures in the Russian Arctic	Svetlana Badina
16:50	Open discussion on orals and posters	

**E-Posters | View in the conference platform and discussion in the session**

	Title	Presenting author
	Decision-making within spray icing on small coastal fishing vessels	Marte Raknerud Hoel

## **ID:19 - Northern Roads and Railways: Social and Environmental Effects of Transport Infrastructure**

Living in The Arctic

25 March 2021 | 08:00 - 10:00 GMT | Room F

### **Conveners:**

Olga Povoroznyuk | Department for Social and Cultural Anthropology, University of Vienna, Vienna, Austria [olga.povoroznyuk@univie.ac.at](mailto:olga.povoroznyuk@univie.ac.at) Yes Warwick F. Vincent Centre for Northern Studies (CEN) & Dépt de Biologie, Laval University, Quebec City, Canada

Warwick F. Vincent | Centre for Northern Studies (CEN) & Dépt de Biologie, Laval University, Quebec City, Canada

Fabrice Calmels | YukonU Research Centre, Yukon University Whitehorse, Canada

As the Circumpolar North comes into increasing global focus, new transportation projects are being imagined and built across the Arctic and Subarctic. Land-based transport and its related infrastructure cause tremendous changes in socio-ecological systems, including new forms of mobility and connectivity that affect the circulation of people, goods, resources and information. Transport infrastructure also affects the natural environment by altering landscape and ecological processes and expanding the human footprint into remote, formerly pristine ecosystems. Rapid climate change is bringing new challenges for construction and maintenance of transport systems, requiring new adaptive solutions. This session invites presentations that consider the complex entanglements between humans, environment and transportation infrastructure (roads, railways, pipelines and coastal facilities), including perspectives from the social and natural sciences, engineering and transportation studies.

### **25 March 2021 | 08:00 - 10:00 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
08:00	Introduction by the conveners	
08:05	Cumulative impacts of a road and climate change to the vegetation and terrain of an ice-wedge polygon landscape, Prudhoe Bay Oilfield, Alaska, 1949–2019	Donald A. Walker
08:20	Roads and Railroads in the North: What Do They Do for Local Communities?	Peter Schweitzer
08:35	Roads and Railroads of the Russian North: Social Dimensions of Infrastructure Projects	Olga Povoroznyuk
08:50	Geohazards caused by massive ice below the Dempster Highway, YT: an overview and some possible adaptation approaches	Fabrice Calmels
09:05	Tracing footprints of human-nature relations: case-study of informal roads in changing Siberian taiga	Vera Kuklina
09:20	Small vessels in social and economic development of the Russian Arctic	Marina Nenasheva
09:35	Open discussion on orals and posters	

**E-Posters | View in the conference platform and discussion in the session**

Time	Title	Presenting author
	Changes of river ice characteristics in the North-East of Russia	Anastasia Zemlianskova
	Transport accessibility problems of the isolated settlements in Russian European Arctic Zone	Alexey A. Pankratov

## **ID:20 - The Arctic Highway(s): Multidirectional effects of socio-economic changes**

Living in The Arctic

24 March 2021 | 08:00 - 10:00 GMT | Room G

### **Conveners:**

Yulia Zaika | Kola Research Centre of the Russian Academy of Sciences

Tuyara Gavrilyeva | North-Eastern University, Yakutsk

It is known that any changes or effects in the Arctic are not idiopathic. They have specific origins while having most of uncertainty in time and spatial scales. Global impacts spread through the national to regional levels having the reverse effect. While environmental changes are more explicit to global understanding, socio-economic changes usually have an implicit character concerning mostly regional and national levels, but may have the deferred effect to global arena, and is an important co-influence model especially within the concept of the Arctic sustainability. One of the examples of such model is the process of self-development of local communities within the existing programs of cross-border cooperation which involves the number of different nations and have a positive effect to local socio-economic processes with larger feedback to other levels including global. The other example refers to transport and digitally isolated communities that have various responses to the challenges of global trends. Often, mostly negative events, including natural disasters, the coronavirus pandemic, and global conflicts, spread to the North slowly but have a stronger impact. Uncertainty and vulnerability, due to lack of access to information and other resources, can be fatal. The search for sources and limits of sustainability of the northern communities, examples of successful socio-economic changes at the potential transition border of global processes to the local level is another discussion of the session. In this session we aim to track Arctic interdisciplinary cases which reflects multidirectional patterns of changes from global to regional and from regional to global levels.



**24 March 2021 | 08:00 - 10:00 GMT | Room G | Oral Presentations**

Time	Title	Presenting author
08:00	Introduction by the conveners	
08:05	Access to the Territories of Traditional Nature Use: Mobility of Local Communities in the Conditions of Industrial Development	Viktoriiia Filippova
08:20	Cross-border cooperation as the element of regional science diplomacy and the factor for self-development in the Russian Arctic (by the example of Murmansk region)	Yulia Zaika
08:35	Multidimensional poverty assessment of rural population in Sakha Republic (Yakutia)	Tuyara Gavriilyeva
08:50	Oil and Gas industry and Sustainable development in the Arctic	Stepanova Nadezhda
09:05	Spatial features of urbanization in the Arctic regions (case of Yakutia)	Antonina Savvinova
09:20	Open discussion on orals and posters	

**E-Posters | View in the conference platform and discussion in the session**

	Title	Presenting author
	Arctic regions sustainable path	Stepanova Nadezhda
	Human Capacity and Its Influence on Social Well-being in a Circumpolar Region	Anatoly Silin

## **ID:21 - The spectrum of intersectionality in the Arctic - from discrimination to diversity and inclusion**

Living in The Arctic

26 March 2021 | 08:00 - 10:00 GMT | Room F

### **Conveners:**

Doris Friedrich | The Arctic Institute; University of Vienna

Dina Abdel-Fattah | International Arctic Research Center, University of Alaska Fairbanks

Olivia Lee | International Arctic Research Center, University of Alaska Fairbanks

The people who call the Arctic their home are diverse on many levels, from ethnicity, class, and gender, to sexual orientation. Many of these aspects are often overlooked or ignored, not only in everyday social life, but perhaps even more so in political decision-making. Discrimination is still an important issue. Women and LGBTQ+ are disadvantaged on various levels and there is little knowledge and mention of non-binary genders. Indigenous peoples still struggle to make their voices heard and have their rights respected. Intersectionality is concerned with the ways in which different forms of oppression interact and potentially reinforce each other. In a changing Arctic, distinct but associated forms of discrimination might further increase the negative impacts of climate change on particularly vulnerable groups. This session invites contributions that revolve around different aspects of intersectionality, discrimination, diversity, and inclusion. It will not only examine current challenges, but also look to possibilities for improvement. Our aim is to open up a space for discussions beyond theoretical research and for sharing perspectives. We particularly welcome contributions from early-career researchers and Traditional/Indigenous knowledge holders.

### **26 March 2021 | 08:00 - 10:00 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
08:00	Introduction by the conveners	
08:05	Moving From Diversity to Inclusion: Meaning, Model, and Practice	Kaja Brix
08:20	Babushkas and Rural Indigenous Activisms	Sardana Nikolaeva
08:35	Implementation of Inuit Self-Government in Nunavut	Zarina Shagieva
08:50	Inspiring Girls Expeditions Alaska: Removing barriers to accessing science and the outdoors for high school youth and early career professionals	Joanna Young
09:05	Open discussion on orals and posters	

**E-Posters | View in the conference platform and discussion in the session**

	Title	Presenting author
	Lifting barriers together for more inclusive Arctic research	Pascale Ropars
	From Omission to Commission and now Equity: Indigenous Representation in Arctic Research	Margaret Anamaq Rudolf
	Work-life conflicts in the Portuguese Polar community	Maria Teresa Cabrita

## **ID:32 - Responsible development of the Arctic – opportunities, challenges, and pathways to action**

Living in The Arctic

25 March 2021 | 18:00 - 20:00 GMT | Room F

26 March 2021 | 11:30 - 13:30 GMT | Room F

26 March 2021 | 15:30 - 17:30 GMT | Room F

### **Conveners:**

Birgitta Evengard | Umea University, Sweden

Douglas Nord | Scientific Advisory Board, Arctic Programme, NordForsk

Niila Inga | Leavas cearru, Nordic Center of Excellence REXSAC

The NordForsk session addresses the interlinked climate-change effects of health and environment that strike at the heart of Arctic communities, affecting all socio-economic and social-ecological aspects including different management regimes and traditions of adaptation. The co-production of knowledge with local communities is a prerequisite for a new understanding of resilience in the Arctic. A sound basis for new approaches is assessments that take into account the multiple pressures from climate change as well as societal activities, such as mining, energy production, fisheries, reindeer herding, forestry, and tourism, while encompassing contemporary issues as well as legacies from the past. The NordForsk session addresses strategies for sustainable development of the Arctic, by integrating views from indigenous traditions, natural and social sciences, health, and humanities within a globalisation and climate-change perspective. The session invites relevant scientific and indigenous contributions for the promotion of adaptive actions at local and regional levels of the Arctic.

**25 March 2021 | 18:00 - 20:00 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
18:00	Introduction by the conveners	
18:05	First records of adult <i>Hyalomma marginatum</i> and <i>H. rufipes</i> ticks in Sweden – demands monitoring of new pathogens into previously free areas and communities	Giulio Grandi
18:20	On incidence patterns of two tick-borne human diseases in the Nordic area and vegetation changes	Helena Bylund
18:35	The Geography of Northern Infectious Diseases, with particular emphasis on climate-change effects	Tomas Thierfelder
18:50	Virome in Eurasian tundra reindeer ( <i>Rangifer t. tarandus</i> ) in Norway, Sweden, Finland and Russia – Evidence from Next-Generation-Sequencing (NGS)	Ann Albihn
19:05	Arctic Wetlands Threatened by Permafrost Thaw in a Warming Climate	Elisie Kåresdotter
19:20	Quantifying hydroclimatic change effects on infectious disease spreading	Yan Ma
19:35	Open discussion on orals and posters	

**26 March 2021 | 11:30 - 13:30 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
11:30	Introduction by the conveners	
11:35	Climate change will increase the risk for infectious diseases in the mouth and eyes of reindeer in the Nordic countries	Ulrika Rockström
11:50	Climate sensitive infections in Greenland and Northern Sweden: a serological study	Anders Koch
12:05	Climate sensitive infections will exacerbate current challenges in reindeer herding: A case from northern Norway.	Grete K. Hovelsrud
12:20	Linkage between temperature anomalies and outbreaks of climate-sensitive infectious diseases in Arctic reindeer herds	Hans Tømmervik
12:35	Supplementary feeding and animal wellbeing	Majken Paulsen
12:50	Supplementary winter feeding of domestic reindeer affects their vital rates and the herds' production output	Øystein Holand
13:05	Open discussion on orals and posters	

**26 March 2021 | 15:30 - 17:30 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
15:30	Introduction by the conveners	
15:35	A Sami–Inuit youth exchange. A Youth Participatory Action Research Programm as a way to reflect on how they see their future as members of the community.	Sylvie Blangy
15:50	Accelerating climate and land use pressure on environment and people in Arctic Sweden; challenges for sustainable land use planning	Carl Österlin
16:05	Ecological justice in North – West Russia: experiences of communication between authorities and locals in the Arkhangelsk Region, Russia.	Natalia Kukarenko
16:20	Societal Infrastructure and Climate Sensitive Infections: The Complexity of Climate Change Adaptation in Arctic Pastoralism	Barbara Baczynska
16:35	Spreading or Gathering? Can Traditional Knowledge be a Resource to Tackle Reindeer Diseases Associated with Climate Change?	Jan Åge Riseth
16:50	The historical dimension of mining impacts in the Arctic: lessons from multidisciplinary research	Dag Avango
17:05	Open discussion on orals and posters	

**E-Posters | View in the conference platform and discussion in the session**

	Title	Presenting author
	Brucella spp. infection - a neglected zoonotic disease and a threat for reindeer herders in northern Russia	Irina Egorova
	Climate change impacting health in Sitka, Alaska: Is justice achieved through local solutions to collective action problems?	Luke Matthews
	Fresh locally grown produce in Arviat, Nunavut: The social and economic impact of a greenhouse	Julie Robertson
	Learning to co-create Intersectional and Gender-Responsible sustainable knowledge in the Arctic – mapping the terrain	Mervi Heikkinen
	Seasonality in Tourism in Arctic Regions of Russia	Oleg Barbakov
	Seroprevalence of pestivirus – a potential viral health threat to semi-domesticated and wild reindeer in the Nordic countries and Russia	Javier Sánchez Romano
	Team Dynamics and Decision-making in High Performance Environment at Svalbard within Search and Rescue Operations	Marte Raknerud Hoel
	Ticks on the move – increased risk for zoonotic infections in the North	Anna Omazic

## **ID:75 - Arctic Voices in Art and Literature**

Living in The Arctic

24 March 2021 | 16:30 - 18:30 GMT | Room F

### **Conveners:**

Ingeborg Høvik | UiT The Arctic University of Norway

Marie-Theres Federhofer | Humboldt-Universität zu Berlin

Sigfrid Kjeldaas | GenØk - Centre for Biosafety

This session invites humanities-based papers concerned with stories that places Arctic indigenous peoples and animals at the centre. The starting point for these stories is local places in the Western Arctic in the 19th and 20th centuries, a period when people and animals in this region experienced increased contact with and irrevocable influence from Europe and North America, through exploration, travel, settlement, missionizing, resource extraction and administration. While the dominant history of the Arctic in the 19th and 20th centuries concerns the accomplishments of white men, this session considers the perspectives, experiences and consequences for those who were on the receiving end of Euro-American imperialism. We find traces of these suppressed and forgotten stories in texts and images based on meetings between Arctic indigenous peoples and Europeans/Americans and between humans and Arctic animals. This material falls in 3 main categories 1) Western art and literature bearing traces, or the clear presence, of indigenous peoples; 2) Images and texts created Arctic individuals working in a colonial context; and, 3) Western and Arctic indigenous art and literature pointing to animal agency.

### **24 March 2021 | 16:30 - 18:30 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
16:30	Introduction by the conveners	
16:35	Gendering Arctic Memory: Understanding the Legacy of Josephine Diebitsch-Peary	Ilisimatusarfik
16:50	Mapping and Materiality: Inuit Cartography in Greenland	Isabelle Gapp
17:05	Masters of the Arctic. Art Historical and Political Dimensions of a Touring "Inuit Art" Exhibition (1989–1994)	Linn Burchert
17:20	Samuel Hearne's Arctic Animals: on cultural blindness, knowledge transfers and hope	Sigfrid Kjeldaas
17:45	Un-highlighting icons from museum collections	Charis Gullickson
18:00	Open discussion on orals and posters	



**E-Posters | View in the conference platform and discussion in the session**

Time	Title	Presenting author
	Messy episodes. Indigenous countersigns in Ludwig Choris's ethnographic portraits of Kamchadal, Aleut and Chukchi (1822)	Marie-Theres Federhofer
	Social Encounters: Portraits of the Yup'ik Women of Taciq, Alaska, 1850-51	Eavan O'Dochartaigh
	The portrayal of Inuit and Sami in the Nordic polar exploration literature of the late 19th century	Paula Zeman
	Traces of an Arctic Voice: the Case of Qalaseq	Ingeborg Høvik

## **ID:83 - Human-environment relations - a multi-disciplinary perspective on their repercussions in a changing Arctic**

Living in The Arctic

24 March 2021 | 08:00 - 10:00 GMT | Room F

24 March 2021 | 10:30 - 12:30 GMT | Room F

### **Conveners:**

Dina Abdel-Fattah | Arctic University of Norway

Doris Friedrich | The Arctic Institute; University of Vienna

Olivia Lee | International Arctic Research Center, University of Alaska Fairbanks

The changing environment of the Arctic entails many challenges: from sea level rise to extreme weather events and the accompanying challenges to infrastructure, food security, health and many more. Local-global linkages and the complex nature of these changes require a comprehensive, multi-disciplinary approach, which bridges the gaps between various types of knowledge: between different disciplines from both natural and social sciences, and between scientific, local, and Indigenous knowledge and experience. The focus of this session is on multi- and interdisciplinary research, which sheds light on human-environment relations, interlinkages and environmental issues, as well as governance and policy considerations. What can we learn from the integration of natural and social sciences and other types of knowledge? A special emphasis will be placed on the experience of Indigenous communities. While climate change is of foremost importance, we welcome contributions on a broad range of topics with significant implications for a changing Arctic, which include, but are not limited to, loss of biodiversity, resource management, pollution, subsistence and food security, and wildlife-related conflicts.

### **24 March 2021 | 08:00 - 10:00 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
08:00	Introduction by the conveners	
08:05	Predicting the Impact of Future Sea Level Change Around the Coast of Greenland: Local Responses to Global Change	Kirsty Tinto
08:20	Public Awareness of Anthropogenic Climate Change in Greenland	Kelton Minor
08:35	Waste Disposal in the Arctic Region: Challenges and Efforts of Small and Remote Communities in Alaska Based on Comparison with Japan	Kaori ISHII
08:50	Inuit Food Sovereignty and Self-Governance: Understanding the connections between Inuit Food Sovereignty and adaptive and holistic Circumpolar management	Carolina Behe
09:05	Adapting to Social and Environmental Stressors during a 3-month moon Habitat Simulation in Greenland	Pedro Marques-Quinteiro
09:20	Healthy Ageing in the Post-Pandemic Arctic: Possible or not Realistic?	Anastasia Emelyanova
09:35	Open discussion on orals and posters	

**24 March 2021 | 10:30 - 12:30 GMT | Room F | Oral Presentations**

Time	Title	Presenting author
10:30	Introduction by the conveners	
10:35	Incorporating mining as the traditional economy: indigenous visions of sustainability in Northwest Russia	Anna Varfolomeeva
10:50	Fishery resources as an indicator of changes in social-ecological systems affected by informal roads	Natalia Krasnoshtanova
11:05	Reindeer husbandry in peril? How extractive industries exert multiple pressures on an Arctic pastoral ecosystem	Christian Fohringer
11:20	Center-Periphery Relations in Norway on the Example of Wolf-Related Conflicts	Doris Friedrich
11:35	Domestication of mink in the Arctic: hunting to fur farming	Yuka Oishi
11:50	Open discussion on orals and posters	

**E-Posters | View in the conference platform and discussion in the session**

	Title	Presenting author
	"General cleaning" of the Russian Arctic: restoration of territories from accumulated environmental damage	V. Budayeva
	Balance of environmental-economic relations of business and authorities in the arctic regions of Russia	Anastasiia Chapargina
	Ensuring the ecological safety of the Arctic for the sustainable development of indigenous peoples	V.S. Varnikova
	The impact of industry on the environmental safety of the Russian Arctic	E. Nadirova