

2021 ARCTIC BUILDING BRIDGES FRONTIERS TROMSØ NORWAY 1-4 FEBRUARY

Arctic Frontiers Science 2021 – Call for Abstracts

Arctic Frontiers Science conference is traditionally international and multidisciplinary, bringing together social sciences, humanities, physical and life sciences. The Arctic Frontiers Science is focusing on both fundamental and solution-oriented research with strong impact, which addresses growing societal challenges and needs in the Arctic region. Arctic Frontiers Science is developed with the guidance of the Strategic Science Committee of Arctic Frontiers.

It is a special time now and we send warm thoughts to all our friends around the world. We are optimistic and hope that in the first week of February 2021 we can once again gather in Tromsø for good discussions for a sustainable development in the Arctic. Arctic Frontiers secretariat will closely monitor the situation with Covid-19 and develop an optimal technical solution and format for the conference. As of now, it will likely combine elements of a traditional in-person and digital conferences, with a possibility to participate online. Please stay tuned for more updates.

Arctic Frontiers Science 2021 will take place on 1-2 February 2021. We will organise six science sessions originally proposed by Arctic Frontiers partner institutions:

- Session 1. Arctic health and social inequalities in health
- Session 2. Who gets to tell the Arctic stories?
- Session 3. Valuing the digital ocean
- Session 4. Small and medium sized enterprises' (SME) strategies for social sustainability in the High-North
- Session 5. The coupled Arctic system: Improved understanding from recent-international campaigns
- Session 6. Advanced prediction capabilities for the Arctic and beyond

Timeline

- 29 May 2020: Final call for abstracts is advertised
- Late June 2020: Online abstract submission system is open
- 8 September 2020: Abstract submission deadline
- 25 September 2020: Abstract acceptance notification
- 5 October 2020: Tentative program is available online

Abstract submission details

Abstracts may only be submitted via internet by completing the form on Arctic Frontiers website. The online submission form will be activated in late June 2020. During the submission process authors will be asked for the following information:

- Abstract title
- Abstract text (less than 400 words)
- Three research highlights (less than 200 characters each)
- All authors' and co-authors' names and affiliations
- Contact information of the corresponding author

All further updates about Arctic Frontiers Science 2021 planning will be published on this page. We look forward to welcoming you at Arctic Frontiers 2021!

Session 1: Arctic health and social inequalities in health

The Arctic region includes eight countries inhabited by indigenous and non-indigenous populations. The indigenous populations often represent minority groups in the countries in which they reside. In the multi-ethnic Arctic region several factors may influence the population groups' health and living conditions differently, like differences in history and development, grave environmental changes, education and economy.

In the pan-Arctic region we observe increasing inequalities in health – even in welfare societies where all citizens in principle should have equal access to health services and health literacy. What causes the great differences in morbidity and mortality of common diseases between countries and between ethnic populations in this region, and how big are such differences? How can we build actionable knowledge to improve health and reduce inequalities in health?

The determinants of health in a life course perspective are complex and interrelated. Research has demonstrated that historically traumatic events and contemporary stressors have an impact on future health and well being on an individual level, as well as on families and communities. Childhood circumstances have a major influence on adult health related behaviour, socioeconomic position, and social relationships. However, individual or collective changes in lifestyle in adulthood may alter life expectancy and mental and physical health.

In order to combat health inequalities between and within countries, we need a better understanding of the state of health and disease in various population segments of the Arctic region – Indigenous peoples, majority populations and immigrants, and among the young as well as the elderly population. Public health authorities and policy makers need improved knowledge of the causes of suboptimal health as well as better knowledge of which interventions are effective. This includes a better understanding of how culturally relevant interventions are key in order to improve health and well being among indigenous peoples.

Addressing UN Sustainable Development Goals on Health and Well being (No. 3) and Inequalities (No 10) as well as WHO Rio Political Declaration on Social Determinants of Health, we welcome abstracts for oral and written presentations aiming to increase insight into the complex interrelationships between health-related choices, the social gradient and modifiable risk factors for physical and mental health. An overarching goal is to contribute to building actionable knowledge to reduce inequalities in health and to improve health of the Arctic populations.

In particular, we welcome contributions within the field of:

- Public health and life expectancy
- Health services and treatments, including culturally relevant and indigenous-focused health care solutions
- Occurrence and prevention of infections including the covid-19 pandemic, zoonotic disease threats and antibiotics resistance
- Non-communicable diseases (i.e. CVD, cancer, COPD)
- Mental health and well-being
- Self-harm including suicide, and violence in close relationships
- Child and youth health
- Strength-based interventions to improve health and well being of indigenous peoples
- Injuries and injury prevention
- Alcohol and substance use and abuse
- Environmental pollutants and human health
- Health literacy
- Dental health
- Food safety, security, and sovereignty, and dietary transitions in the Arctic

The science committee plans to arrange a special issue or collection of articles in high-impact peer-reviewed journals (tentatively, International Journal of Circumpolar Health and/or Scandinavian Journal of Public Health) in conjunction with the session. More details will be available in September 2020.

Science Committee

- **Inger Njølstad**, UiT The Arctic University of Norway (lead)
- **Christina Viskum Lytken Larsen**, Centre for Public Health in Greenland/ National Institute of Public Health, Denmark
- **Yury Sumarokov**, Northern State Medical University, Arkhangelsk, Russia
- **Arleigh Reynolds**, UAF Center for One Health Research, Alaska, USA
- **Ann Ragnhild Broderstad**, Centre of Sami Health Research, Norway
- **Jonas Minet Kinge**, Norwegian Institute of Public Health, Norway
- **Marie Wasmuth Lundblad**, UiT The Arctic University of Norway (Secretary)

Session 2: Who gets to tell the Arctic stories?

Today there is a growing academic, political and economic interest in the Arctic, including geographical areas inhabited by Indigenous peoples. Much of this interest is connected to climate change, natural resources and tourism. This new attention directed towards these marginal topographies importantly also entails a renewed awareness of the peoples who live there; primarily first Nation communities in Northern and Arctic areas in Europe, USA and Canada. This session welcomes contributions from all Arctic regions, and aim to analyze who gets to tell the stories of the rapidly changing Arctic in national and international fora.

Most of the Arctic communities have been subjected to settler colonisation. In Scandinavia the Sámi historian, Veli-Pekka Lehtola, has for example pointed to how the territories originally inhabited by the Sámi came to the possession of the Nordic countries as a result of a long intervention from the sixteenth- to eighteenth century on (Lehtola 2015, 25). Even though the Sámis' right to collective self-determination, and to define their own identity in accordance with their own customs and traditions, has been affirmed in the UN Declaration of Rights of Indigenous Peoples (UNDRIP, article 33–1), this right is constantly under pressure from the national states in Norway, Sweden, and Finland (Hætta 2002). Furthermore, as argued by Laura Junka-Aikio (2016); the possibilities to address the serious challenges that are facing the viability of life in the north, such as the expansion of the mining industries, damages to the natural environment, depopulation etc., are weak, and the voices of the indigenous populations are often effectively silenced. At the same time, many indigenous communities are currently engaged in processes of tracing and reviving knowledge of landscape and spaces – as well as exploring the issue of discontinuity: how memory and knowledge seem to be irretrievably lost in the aftermath of colonization, modernization, and assimilation politics.

This proposed session thus aims at addressing and analyzing this complex situation, by expanding the focus from the Nordic countries to a broader, international pan-Arctic perspective. What are the implications of Arctic colonialism to the politics of knowledge? How may current research contribute to the recognition of the colonization of indigenous lands and to its implications for indigenous experiences in the present? What are the limits to what non-indigenous scholars may study, articulate and understand? How much is it possible for non-indigenous scholars to learn from indigenous perspectives? (Tuhiwai Smith 1999). Can we apply such learnings in our own research? Who gets to tell the stories about the Arctic today?

Science Committee

- **Sigrid Lien**, Professor, Department of Linguistic, Literary and Aesthetic Studies, University of Bergen, Norway (lead)
- **Laura Orvokki Junka-Aikio**, UiT The Arctic University Museum of Norway
- **Hilde Nielssen**, Associate Professor, Intercultural Studies, NLA University College, Bergen, Norway
- **Knut Mikjel Rio**, Professor, Department of Cultural History, University Museum of Bergen, Norway

Session 3: Valuing the digital ocean

A wide range of economic and government sectors are investing effort to understand the added management aspects related to the blue economy, blue growth, oceanic sustainability, and blue entrepreneurship. How may we begin identifying ways for a systematic study of the role of digital technologies in valuing the Arctic Ocean as it undergoes radical transformation? What should the value of these technologies be beyond any industry or government program to which they are attached? What are the various techniques and forms of scalability and precision through which value is being created in terms of economic diversification, shared prosperity and Arctic oceanic sustainability? This proposal invites abstracts with a mix of quantitative and qualitative data analysis methods, including literature reviews, critical analysis, survey instruments, in-depth interviews and focus groups of key stakeholders. A key theme of this session addresses ways that digital technologies may serve to expand, challenge, or redefine the legitimacy of existing value regimes (e.g., finance and insurance) beyond local and circum-Arctic contexts, especially in the context of climate change and resource overexploitation. The session theme originates from concerns of The New Arctic & Digital Ocean (NADO) project inaugurated in 2018 with support from the Peder Sather Center for Advanced Study and is led by the NADO community at NTNU, UC Berkeley, and UiT The Arctic University of Norway. Contributions may address the valuation of information from environmental technologies in the context of traditional industries such as fisheries, hydrocarbon development, tourism, and maritime transport, but also emerging activities such as aquaculture, offshore renewable energy, and marine biotechnology or mining. Fundamental perspectives can include exploring how an emerging "Arctic blue economy" is compatible with environmental objectives or that align with the United Nations Decade of Ocean Science for Sustainable Development to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

The science committee plans to arrange a special issue or collection of articles in one of the high-impact peer-reviewed journals (e.g., Environmental Research Letters) in conjunction with the session. More details will be available in September 2020.

Science Committee

- **Arthur Mason**, Associate Professor, Department of Social Anthropology, NTNU, Norway (co-lead)
- **Alexander Arroyo**, MLA, Harvard Graduate School of Design, PhD Candidate, Department of Geography, UC Berkeley, USA (co-lead)
- **Camilla Brattland**, Assistant Professor, Institute of Social Sciences, UiT The Arctic University of Norway
- **Karen Hébert**, Assistant Professor, Geography and Environmental Studies, Carleton University, Canada
- **Espen Johnsen**, Researcher, Institute for Marine Research, Norway
- **Berit Kristoffersen**, Assistant Professor, Department of Social Sciences, UiT The Arctic University of Norway
- **Oxana Timofeeva**, Assistant Professor, Department of Political Science, European University of St. Petersburg, Russia
- **Ståle Walderhaug**, CEO, SINTEF Nord, Norway

Session 4: Small and medium sized enterprises' (SME) strategies for social sustainability in the High-North

Small and medium sized enterprises (SMEs) constitute the bedrocks of many northern communities. While local communities rely on Northern SMEs, Northern SMEs also tend to be deeply reliant on their communities and relationships to local stakeholders. This session highlights how SMEs build business models to handle this reciprocal dependence.

The UN Global Compact describes social sustainability as a proactive way of managing and identifying business impacts on employees, workers in the value chain, customers, and local communities. Strategies of social sustainability thus are likely to form a critical and integral part of many Northern SMEs strategies. Yet such strategies also incorporate a series of potential conflicts and dilemmas, between different logics and different values, such as between expectations about local affiliations on

the one hand and market competitiveness on the other. "Strategies" here may not always constitute formal strategies but rather refer to something that SME's "do" or "are".

Small and medium sized enterprises differ in significant ways from larger enterprises in their approach to corporate social responsibility and social sustainability. SMEs tend to be independent, internally financed, cash-limited, multi-tasking, flexible, largely local and characterised by informal relationships inside and outside of the firm. Unlike larger companies, which can deploy specialised structures or functions to cater to community-relations, local SMEs usually, have little or no excess resources and will need to build social sustainability into their core business model and processes.

SMEs perspectives and strategies will differ reflecting different social, economic and institutional contexts. To reflect this, we hope to include a geographically and diverse set of contributions spanning the Circumpolar North. In this session, we welcome contributions that explore such questions. Possible contributions include but are not limited to:

- How do northern SMEs see social sustainability relating to their local communities?
- What are some of the challenges and opportunities that SMEs see present themselves and, which strategies do SMEs draw on while seeking social sustainability for their organisation and their communities? Particularly welcome are process-studies that describes how such strategies form, or changes over time.
- Can we see social sustainability as a strategy for resilience? Or, do resilience based strategies of SMEs and their symbiotic relationship with local communities, lead to social sustainability?
- Social sustainability and organisational resilience during crisis, including the Covid-19 pandemic
- How do managers of northern SMEs attract, develop and retain employees with relevant competencies? To what extent and how does HRM strategies transcend organisational boundaries?

The science committee plans to arrange a special issue or collection of articles in an international peer-reviewed journal in conjunction with the session. More details will be available in September 2020.

Science Committee

- **Trude Høgvold Olsen**, Associate Professor, UiT The Arctic University of Norway, Harstad, Norway (co-lead)
- **Svein Tvedt Johansen**, Professor, UiT The Arctic University of Norway, Harstad, Norway and lead, UArctic thematic network "Thematic Network on Managing Small and Medium Sized Enterprises in the North" (co-lead)
- **Vibeke Tannvik**, Project manager politics and communication, NHO Arctic, Norway (The Confederation of Norwegian Enterprise (NHO) is Norway's largest organisation for employers and NHO Arctic is one of 10 regional offices).
- **Yaso Thiru**, Professor, Alaska Pacific University, USA
- **Hjördís Sigurdsteinsdóttir**, Associate Professor, School of Business and Science, University of Akureyri, Iceland
- **Markku Vieru**, Professor, University of Lapland, Rovaniemi, Finland
- **Kristian Wærness**, PhD-student, UiT The Arctic University of Norway, Harstad, Norway (secretary)

Session 5: The coupled Arctic system: Improved understanding from recent international campaigns

The Arctic is a sentinel of global climate change, warming at least twice as fast as the rest of the globe. Rapid changes in the Arctic system associated with the fast sea ice retreat also have a substantial impact on socioeconomics and both regional and global weather and climate. However, our knowledge of coupled system processes has been limited due to a lack of coordinated observations in the high Arctic, covering a full annual cycle including the winter period. Recent and ongoing programs, such as the year-around international MOSAiC expedition (Multidisciplinary drifting Observatory for the Study of the Arctic Climate), Changing Arctic Ocean (UK) and the Nansen Legacy (Norway), aim to collect data in the high Arctic to improve our understanding of key processes among the atmosphere, sea ice, ocean and seafloor. These enhanced, comprehensive observational efforts will ultimately support improvement of sea ice, ecological, weather, and climate predictions.

This session primarily targets recent findings from the MOSAiC expedition, Changing Arctic Ocean, and Nansen Legacy programs and encourages additional contributions from other similar Arctic research initiatives. We invite presentations of recent in-situ and remote sensing observations and modelling studies that examine coupled climate processes in the Arctic atmosphere, ocean, snow and sea ice, including biogeochemistry and the ecosystem. We are especially interested in contributions that highlight the direct interactions between these components of the coupled Arctic system. Furthermore, studies that examine large-scale linkages between the Arctic and lower latitudes are welcome. We hope to facilitate cross-disciplinary discussions and foster international collaboration between national and international initiatives.

We invite submissions addressing topics relevant to those highlighted above, and specific focus areas such as:

- Arctic Atmosphere: Clouds & aerosols, thermodynamic structure, energy fluxes
- Arctic Sea Ice: Snow on sea ice, Sea ice dynamics, Atmosphere-Ice coupling
- Arctic Ocean: Advective processes, ocean-ice and ocean-seafloor interactions, energy, nutrient and material fluxes
- Biogeochemistry in the Arctic: Tracing biogeochemical reactions during freeze and melt cycles; Trace gas exchange with both the overlying Arctic atmospheric boundary layer and the underlying sea ice influenced ocean
- Arctic Marine Ecosystems: Ecological-physical interactions, sea-ice-pelagic-benthic coupling, climatic forcing and phenology, interactions within food webs
- Observations of the coupled Arctic climate system during Polar Night

Science Committee

- **Mats Granskog**, Norwegian Polar Institute, Norway (co-lead)
- **Anja Sommerfeld**, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Germany (co-lead)
- **Jessie Creamean**, Colorado State University, USA
- **Andreas Macke**, TROPOS, Germany
- **Finlo Cottier**, Scottish Association for Marine Science, UK & UiT The Arctic University of Norway
- **Ellen Damm**, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Germany
- **Claire Mahaffey**, University of Liverpool, UK
- **Johanna Myrseth Aarflot**, Institute of Marine Research Bergen, Norway (secretary)

Session 6: Advanced prediction capabilities for the Arctic and beyond

Today Rapid climate and environmental changes, and an increasing human presence in the Arctic due to socio-economic opportunities, have all triggered an immediate need for both basic and applied research advances to improve prediction capabilities in the Arctic and beyond. Triggered by increased accessibility due to recent sea-ice retreat, activities related to exploration, tourism, transportation and scientific research are attracting economic investments. A research driven co-production of weather, climate and sea-ice information services, from daily to sub-seasonal to decadal time scales, is crucial for economic, societal and environmental sustainable growth.

Arctic weather and environmental conditions can be a risk to Indigenous Peoples and local communities in the Arctic, as well as high-latitude activities and infrastructure such as shipping, fishery, natural resources, tourism, land transport and aviation. However, the Arctic has unique prediction challenges: more and better use of observation systems of the atmosphere, sea ice and ocean (e.g. improve the use of satellite data over sea ice and snow and in cloudy conditions); model uncertainty due to physics parameterisations and limitations in resolution; the complex interplay in the sea-ice characteristics; the turbulent upper ocean; specific high-impact weather situations like polar lows; and so on. There is also evidence that weather and climate of the mid-latitudes are affected by what happens in the Arctic. Advanced weather and climate models are needed to understand and predict the linkages between the Arctic and the global climate system.

The Year of Polar Prediction (YOPP), established by the World Meteorological Organisation, coordinates activities for initiating and promoting collaboration among international institutes, operational forecasting centers, and stakeholders in an effort to advance predictive skill in Polar Regions and beyond. During the YOPP Core Phase period (mid-2017 to mid-2019), but also during the final YOPP Consolidation Phase intensive observing, modelling, prediction, verification, user-engagement and education activities are being coordinated, and a large number of projects, programs and initiatives are contributing to reach the aims of YOPP.

This session – Advanced Prediction Capabilities for the Arctic Region and Beyond – capitalizes on and consolidates recent scientific accomplishments for advanced climate, weather and sea-ice Arctic forecast information, tailored to key social, environmental and economic needs. We welcome presentations on activities and results from YOPP-endorsed projects as well as contributions from other projects that focus on Arctic environmental monitoring, prediction and services for safe and sustainable Arctic operations.

We invite submissions addressing the above-mentioned issues, and in particular topics such as:

- use of existing and new observation systems, such as in (coupled) data assimilation and observation network design;
- exploitation of satellite data such as in observational data usage for process studies, as a forecast verification data source and long-term environmental monitoring;
- verification of Arctic weather and environmental predictions from hours to seasons;
- the predictability of the atmosphere-cryosphere-ocean system;
- advancements in understanding key Arctic processes and phenomena, such as the linkages between the Arctic and lower latitudes, sea-ice atmosphere interactions, or boundary layer processes;
- improved model representation of key processes: development, improvement and implementation of high-resolution Arctic numerical weather prediction models and their coupling to other compartments of the Earth system;
- transfer improved Arctic forecasting skill into weather, climate and sea-ice information services; and
- future major international (multi-disciplinary) science programs

Science Committee

- **Jørn Kristiansen**, MET Norway (co-lead)
- **Thomas Jung**, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Germany (co-lead)
- **Jon Børre Ørbæk**, Research Council of Norway
- **Paolo Ruti**, World Meteorological Organization
- **Steffen Olsen**, Danish Meteorological Institute
- **Gabrielle Gascon**, Environment and Climate Change Canada (ECCC), Canada
- **Kirstin Werner**, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Germany (secretary)