1.0 Opening session
Welcome to the conference. Session program tba.

2.0 Geohazards, biohazards and other hazards
Environmental changes cause a variety of hazards in Svalbard
Svalbard and the Arctic might appear beautiful and serene, but it is also a harsh landscape full of challenges. Some challenges are created by humans, some are caused by nature itself, while human perception defines the risk. To live and work in Svalbard sustainably means to reach a balance between societal development and the environment, to either prevent or adapt to hazards, reduce effects, and embrace consequences. We invite you to look at hazards in a broad sense across disciplines and subjects: from ionospheric distortions to avalanches and permafrost thawing, from extreme weather events to environmental pollution and further to wildlife zoonosis and the recent pandemic.
How is and will the Svalbard community and archipelago be affected by different hazards? Are there lessons from the past useful for the future? How can new and developing technologies be helpful for real-time monitoring and forecasting hazards?

3.0 Science for Society
The societal relevance of Arctic science.
Our scientific endeavours in Svalbard include avalanche forecast, marine pollution, infrastructure, climate change impacts and mitigation, environmental protection, changes in biodiversity, public health risks, science diplomacy, narratives and imaginaries, societal developments and more. This interdisciplinary plenary session invites abstracts from a diverse range of research that holds any relevance for Arctic societies and reflects on it. These could include, but are not limited to, geology, biology, meteorology, safety research, technology and engineering, anthropology, geography, history, archaeology, and other humanities. Lessons learned from the pandemic can be complementary to the focus on societal relevance. This session also includes a panel discussion.
What relevance does science produced in Svalbard have, for the local and the global society? How do we meet the needs of society? What are the challenges in doing that?

4.0 A bear ate my zodiac
We have all been there; something, some things, nothing worked out as planned...
As a recurrent feature of the SSC this fast-moving mini session explores the unexpected. Take the chance to get your 3 minutes of fame. It can be related to anything extraordinary; wild animals or colleagues, equipment or experiments that did not work out exactly as their description said, weather and vessels not co-operating as you wanted.
What can we all learn from your story? How to avoid troubles in the future or how to have a good laugh together?

6.0 From Summit to Sea
Modification of Arctic by interactions
Svalbard is changing fast; glaciers are melting, permafrost is thawing, runoff increases, coastline erodes, both land and ocean gets warmer. Alien species are introduced and the ecosystem as we know it today is changing. The observed and anticipated changes are a result of interactions between drivers, the responses, and consequent feedbacks. The session is thematically broad, and the focus is on interactions between two or more spheres and integration of land and ocean-based research in light of climate change.
What interactions are important to understand when we seek to understand and predict the future of Svalbard?

7.1 Back to the Future
Understanding the past is highly relevant for the understanding the present-day as well as projections into the future.
Sciences are inherent with characterizing, measuring, evaluating, and understanding processes of change. Temporally dependent data can also have various resolution(s) and cover different periods, which might bring specific challenges like uncertainty, calibration, frames of reference, and extrapolation. This parallel session invites abstracts from a diverse range of disciplines that involve past times, present, and future estimations. These could include, geology, social sciences, history, archaeology, cryosphere sciences and glaciology, meteorology, biology, ecology, and space sciences. We particularly encourage abstracts to be placed in a context of the time-specific uncertainties, opportunities, lessons learned, and relevance for future strategy, policy, technology, or governance.
How can researching the past help us predict the future?

7.2 From the ground up

The polar atmosphere is a coupled system with energy and momentum being transferred both vertically and horizontally.

Close to the ground, the weather plays the main role. From top of the atmosphere radiation and charged particles act to impart energy into the system, ionizing and heating the atmosphere. Atmospheric chemistry, including aerosols, plays an important part. To understand the physics behind this coupled system multi-scale observations are required. This can be provided through the use of various observations like rockets and balloons providing high temporal and spatial resolution as well as ground-based observations like lidars and weather stations covering the whole of Svalbard. Satellite imaging can place the data into a wider 'polar' context.

How can we use observations in understanding both the local polar atmosphere and how it relates to the polar atmosphere on a global scale?

7.3 How to develop science-based higher education

We need a stronger focus on polar education to ensure training enough next generation polar scientists.

Svalbard offers a unique location for polar science education. In Svalbard, UNIS is the largest higher education provider, with a focus on Arctic biology, geology, geophysics, and technology. In addition, there are several other Norwegian, European, and international universities which offer training and courses, located in, and related-to Svalbard, including across STEM as well also other topics. To further strengthen education in, and regarding, the polar regions there is a need to focus on the development of good tools, including using the offers existing within science-based polar education, as well as developing new ones. In this session we invite contributions that explore polar education focused on or in Svalbard; including from completed to upcoming initiatives and tools, from strategical to pedagogical viewpoints, and/or individual to collective experiences and ideas. We also encourage presentations of educational initiatives of circumpolar nature highlighting how Svalbard is or could be included.

How do the polar educational offers and initiatives in Svalbard integrate science and education? What tools do we need for further developing polar science-based education in Svalbard?

7.4 Arctic Observation and Data Systems

Utilization of Arctic observations is dependent on the technology at hand

The broad focus of this session lies in the technology used to observe and preserve the observations and data that will be important for polar science now and in the future. Arctic observation and data systems are developing in many scientific disciplines, involving a large number of variables, data formats, metadata, and search and access protocols.

The Arctic data community has recognized the need for better coordination and harmonization between the systems, which is important for accessing cross-disciplinary data. The overarching goal is to develop Arctic Observation and Data Systems in agreement with the FAIR principles (Findable

Accessible, Interoperable, Reusable). Among others we welcome contributions on new instrumentation and technologies, community-based monitoring, Arctic related databases, opensource publishing, processes to identify essential variables in Arctic context, funding opportunities and adaptive long-term ecosystem observation initiatives. Both existing and upcoming developments are welcome.
What improvements in observations and knowledge sharing will enhance the scientific understanding of the Arctic?