

*Arctic Education and Research for Global Challenges*



# **STRATEGY 2025**

**The University Centre in Svalbard (UNIS)**

## About the strategy

The University Centre in Svalbard (UNIS) Strategy 2025 defines the ambitions and main targets for UNIS during the period 2019-2025. The strategy is restricted to the 2019-2025 period, because environmental and societal changes are occurring rapidly within the high Arctic, and in Svalbard and in the Longyearbyen community in particular. A revision of this strategy will be required for the ensuing period.

The strategy outlines a framework for the development of targets and action plans at UNIS. The motivation is to identify the main goals and strategies, but not to describe how these ambitions will be fulfilled in detail. Specific objectives, goals, and actions are identified for each of the main areas of operation at UNIS: Education, research, human resources, infrastructure, field logistic and safety training.

The strategy is developed based on input provided by the entire institution, discussions within the leader group, in the departments and finally approved by the UNIS Board of Directors.



*Photo: Steve Coulson/UNIS.*

*Front cover photo: Lars Henrik Smedsrud/UNIS.*

## About UNIS

The University Centre in Svalbard (UNIS) is the world's northernmost institution for higher education, located at 78° N in Longyearbyen, Svalbard. UNIS was established in 1993 and is currently organized as a state-owned limited company under the Norwegian Ministry of Education and Research. UNIS is led by a Board of Directors appointed by the Ministry. Scientifically, UNIS covers Arctic Biology, Arctic Geology, Arctic Geophysics, and Arctic Technology. UNIS does not offer degrees, but offers education at the bachelor, master and PhD level as an Arctic continuation of the study programmes at the Norwegian universities.

The Svalbard nature is extensively used for education and research purposes, and all education offered at UNIS is field-based. The surrounding area close to Longyearbyen is mostly used for field activities, but also the Svea and Ny-Ålesund areas are important. UNIS owns and operates several large-scale research facilities such as the Kjell Henriksen Observatory (KHO), which is one of the world's largest optical observatories for studies of the middle and upper polar atmosphere, and the SuperDARN radar, an over-the-horizon radar which is part of a global network of similar radars for studies of the upper polar atmosphere.

UNIS is required by the Ministry of education to produce about 220 student years. We have met this goal since 2017. This results in close to 800 students from more than 40 different nationalities annually. Of these students, more than 50% come from Norwegian universities. In 2018, 72 master and 27 PhD students were supervised at UNIS, and the staff consisted of a total of 106 scientists and technical/administrative personnel living and working in Longyearbyen. In addition, 43 adjunct positions and 184 guest lecturers and field instructors contributed to UNIS research and education. The research portfolio of the teaching staff at UNIS secures research-based education within natural sciences and engineering.

UNIS is one of the largest institutions in Longyearbyen.

## Mandate

The purpose of UNIS is to provide higher education and conduct research based on Svalbard's geographical location in a high Arctic region. The special geographical location of UNIS provides a unique advantage through the use of the Arctic environments as a laboratory, and this arena should be used for observations, collection and analysis of data. The education offered at UNIS must be at university level and should be a supplement to the teaching provided at the Norwegian universities, and form part of ordinary national or international university study programmes that leads to exams and degrees at the Bachelor, Master and Doctoral level.

The education must have an international profile, and the teaching must be in English.

Through its activities, the institution will contribute to the development of the society in Longyearbyen and in Svalbard in line with the overall goals of the Norwegian Svalbard policy.



*Photo: Endre Før Gjermundsen/UNIS.*

## Vision

### *Arctic Education and Research for Global Challenges*

The high Arctic region is of the utmost global significance. Climate is changing more rapidly in the high Arctic than in any other place on Earth, and what first happens in the Arctic will be followed by similar developments other places. The pressures on the vulnerable Arctic environment continue to grow due to the expansion of human activities in both terrestrial and marine environments, such as tourism, other commercial developments and research. Consequences of sea ice loss, increased ship traffic, increased fishery activities and marine resource exploration and a changing cryosphere in the Arctic with potential for natural hazards to increase, are all not fully understood.

Improved knowledge of ongoing environmental changes in the Arctic is required to develop predictions of future change and to enable innovative mitigation measures to reduce the environmental and societal consequences from climate change and increased human activity in the area. This knowledge must be brought forward and developed through new generations of Arctic experts.

Based on a high competence within higher education and research in Arctic natural sciences and technology, UNIS will contribute to the understanding of environmental and societal consequences of a changing climate in the Arctic, and contribute to innovative solutions for mitigating measures to ensure fulfilment of UNs Sustainable Development Goals.



*Photo: Ane Cecilie Kvernvik/UNIS.*

## Main objectives and profile

UNIS aims to strengthen bonds within its current main focus in research and educational areas within natural sciences and technology, and in addition establish new arenas for activities related to the current societal challenges in Arctic communities, and in Longyearbyen in particular.

UNIS will contribute with Arctic research, higher education and knowledge dissemination to give Longyearbyen an identity as an advanced knowledge-based community with a sustainable and robust economic life. UNIS shall be an active resource for Longyearbyen and the local communities in Svalbard, and actively integrate UNIS students and staff to apply their competence and research priorities for the benefit of the local society.

UNIS will contribute significantly to realizing the public strategies for Svalbard and the Arctic presented by the Norwegian government. UNIS will help to consolidate the Norwegian position on the archipelago and contribute to the continuation of Longyearbyen as a stable family society.

The climate challenges will be the most important issue for operations at UNIS in the period ahead. UNIS will focus on further developing safe and environmentally sound Arctic field operations through research, education and outreach, and reduce environmental footprints of own activities to an absolute minimum. UNIS will align its activities with the UN's sustainability goals where relevant in a high Arctic perspective, such as "Climate action", "Pure energy for all", "Innovation and infrastructure", "Life under water", "Life on land" and " Good education".

None of these goals may be met without cooperation across disciplines, institutions and borders. UNIS will therefore work to balance specialized discipline knowledge with interdisciplinary initiatives, both nationally and internationally.

### **The ambition of UNIS is to:**

- Be world-leading in research-based field education in high Arctic science and technology – preparing students for future challenges.
- Enhance UNIS` position as an innovative, high quality, cutting-edge Arctic research institution with significant local and global impact.
- Further develop an efficient and professional organization, reflecting the main goals, tasks and working methods for the institution.
- Offer modern infrastructure for operation and future growth.
- Offer safe field- and laboratory activities and further develop the use of new technology, and alternative and efficient solutions for that purpose.

## Educate the next generation of Arctic scientific experts

**Objective 1: Be world-leading in research-based field education in high Arctic science and technology – preparing students for future challenges.**

*The main aim is to offer research-based higher education with unique field components, taking full advantage of the high Arctic location in Svalbard and strengthening education that provides competences for sustainability. Research-based education will be strengthened by applying and developing novel pedagogical concepts in student-based research projects at the BSc, MSc and PhD level, and increase the focus on student-based research projects related to natural and technological challenges in Svalbard by collaboration with local partners. To increase efficiency in a cost-, time-, and quality perspective, Longyearbyen and the surrounding area shall be used for field activities when appropriate.*

### Goals:

1. Provide specialised and interdisciplinary education relevant for science and society, including competencies needed for a sustainable future.
2. Facilitate in-depth student learning through application of multiple learning and teaching methods, with a particular focus on hands-on learning experiences in the field and integrate research in education.
3. Develop a collegial teaching culture where the strengths of the research culture are brought into the educational practice.
4. Be recognized for educational quality and therefore the preferred choice by students of high Arctic studies.
5. Further strengthen the close collaboration with Norwegian universities.
6. Ensure the best possible educational use of the Longyearbyen environment and its unique infrastructure.
7. Contribute to the best possible student life in Svalbard.



Photo: Tina Dahl/UNIS.

## Research in a changing Arctic

**Objective 2: Enhance UNIS` position as an innovative, high quality, cutting-edge Arctic research institution with significant local and global impact.**

*The year-round presence, the international network and the safe field operations are key factors to the UNIS research success. We shall stimulate to a growing focus on research in Svalbard and contribute to excellent studies of pan-arctic challenges thematically within UNIS key research areas, including a priority on innovation. To meet future needs we shall build upon our strengths in natural science and technology and seek to increase the impacts of our research, both locally and globally. UNIS will actively contribute to and benefit from the work of Svalbard Integrated Arctic Earth Observing System (SIOS).*

### Goals:

1. Increase the external funding of research projects and research infrastructure.
2. Become a core partner or leader in international research networks and collaborations.
3. Stimulate cross-disciplinary collaboration by establishing thematic research centres that capitalize available research, infrastructure and support at UNIS.
4. Develop innovative collaborations, solving local societal challenges with global impact.
5. Increase pan-arctic publications in high-ranked journals.
6. Stimulate the further development of core research areas such as space research at UNIS
7. Develop cooperation with the industry to promote innovation as part of the research activities.



Photo: Nick Hulton/UNIS.

## Human resources in a dynamic organization

**Objective 3: Further develop an efficient and professional organization, reflecting the main goals, tasks and working methods for the institution.**

*The society, local industry and natural environment in Svalbard are in rapid change, implying a high degree of uncertainty. UNIS needs to be able to adapt to these changes and simultaneously take advantage of the possibilities this implies. Further development of the institution includes both professionalization within existing areas and development for further growth. Staff and students are our most valuable resources. It is our ambition to support the human resources in the best possible way, to ensure personal development and production at a high level within their areas of expertise, to ensure that both staff and students thrive in Longyearbyen.*

### Goals:

1. UNIS shall attract, develop, reward and retain staff of high international calibre.
2. UNIS shall have a professional leadership at all levels to reach common goals and adapt to changing surroundings.
3. Processes at UNIS shall be transparent and involve the whole institution to ensure ownership at all levels.
4. HR processes and systems shall be transparent, comply with relevant legislation and ensure equal treatment of all staff.
5. UNIS shall have a strong focus on HSE (health, safety & environment) in all areas, including both the physical and psychosocial working environment.
6. UNIS shall have a good and effective information and communication flow.



Photo: Maria Jensen/UNIS.

## Infrastructure to support Arctic education and science

### Objective 4: Offer modern infrastructure for operation and future growth.

*Field-based education and research in the high Arctic demand access to equipment and infrastructure of the highest quality. Access to modern research infrastructure will in most cases mean that UNIS will have to seek active cooperation with other institutions to achieve this. UNIS will also offer its existing infrastructure and equipment in such cooperation. Given our location and competence, we have ambitions in developing research infrastructure which is tailor-made for research in the high Arctic. UNIS will also focus on the further development of the existing world class space research infrastructure at UNIS, the Kjell Henriksen Observatory and the SuperDARN radar. UNIS shall further have access to future-oriented infrastructure in the form of ICT and library services which are a necessity for high quality in teaching and research.*

### Goals:

1. Develop efficient digital solutions for communication and education.
2. Improve the infrastructure of Svalbard Science Centre to allow planned activities to be accomplished in an effective, “state of the art” and safe manner.
3. Plan and work for an extension of Svalbard Science Centre to cover present and future needs.
4. Further develop the infrastructure in cooperation with other institutions.
5. Work for access to a year-round vessel in Longyearbyen with education, research and logistics capacity.



Photo: Eva Therese Jessen/UNIS.

## Safe Arctic field operations

**Objective 5: Offer safe field- and laboratory activities and further develop the use of new technology, alternative and efficient solutions for that purpose.**

*Safety has first priority in all UNIS operations. This shall be reflected in management, planning, operational procedures and day-to-day life at the institution. Building an even stronger institutional safety culture, which makes it possible to work safe in a demanding Arctic environment, is of utmost importance and is a necessity for UNIS to continue to operate in Svalbard. The rapidly changing natural environment implies new and possibly unknown risks, thus UNIS needs to constantly renew and develop the safety management system. Through the Arctic Safety Centre UNIS will focus on doing research on how to do safe field operations as an important measure to secure the best development of safe operation in cooperation with key partners.*

### Goals:

1. Further develop and implement a more professional and systematic research-based approach for managing field operations.
2. Further develop and implement a systematic decision making system that can handle the uncertainties attached to operations in the Arctic (natural hazards).
3. Work towards implementing new technologies, alternatives and efficient solutions for field operations and logistics, such as power supply, transport, and mobile laboratories to reduce environmental footprints.
4. Develop a stronger emphasis on the whole HSE (health, safety & environment) area, where regulations and policies are internally unified.



Photo: Frede Lamo/UNIS.