

Newsletter - Arctic Safety Centre **Summer 2017**

The University Centre of Svalbard

July 2017

<http://www.unis.no/arctic-safety-centre>

Number 2

Introduction

It has been some time since we've last reached out to you via this newsletter, which just goes to show how busy the ASC has been over the past year!

Just a short recap to fresh your mind regarding Arctic Safety Centre. November 2015 the University Centre in Svalbard received positive news from the Ministry of Foreign Affairs that the funding regarding development of an Arctic Safety Centre in Longyearbyen hosted at UNIS was approved. The mission of the Arctic Safety Centre is to contribute to safe and sustainable human activity in the Arctic. Our ambition is that the center shall share this knowledge through research, outreach and education, tailor made courses, guidance of students, industry, residents of Longyearbyen and the arctic society in Svalbard. The project has been operational for approximately one year and the activity level has been high.

General Progress of the project

We have had a busy spring with several activities to develop the Arctic Safety Centre so far this year. 1st of February the project submitted a proposal for a pilot course entitled: "Risk Assessment of Arctic Natural Hazards" to the educational committee of UNIS. The course was approved and shall run at UNIS in June 2018.

This is a 10 ECTS course and the table below gives you a picture of the academic content of the course.

Risk Assessment of Arctic Natural Hazards

- Weather hazards:
 - Basic factors characterizing the weather in the Arctic and their impacts on people and infrastructure present in the area
 - Acquisition and application of weather data for risk assessment will be taught
- Slope hazards:
 - Basic process-controlling factors and their vulnerability to climate change processes
 - Basic data acquisition methods on analyzing the underlying geophysical processes are applied.
 - forecasting, prevention, mitigation measures
- Biohazards:
 - The natural behavior of polar bears and other large marine mammals is described and discussed in the light of human-animal interaction and de-escalation.
- Cryo hazards:
 - Basic process-controlling factors and their vulnerability to climate change are introduced focusing on sea ice dynamics, glacier mass balance and -dynamics, iceberg production, and permafrost evolution.
 - Basic data acquisition methods for analyzing the underlying geophysical processes are applied and tested. Sea ice dynamics and iceberg production.
- Risk assessment: foundations and application

The Steering committee for the Arctic Safety Centre has met once so far this year. Below you can meet the committee.



Participants in the ASC Steering Group at UNIS 3-4th of May: John Guldahl, Morten Rasch, Dr. Thor Bjørn Arlov, Dr. Harald Ellingsen; chairman, Professor Hanne H. Christiansen, Dr. Lars Kullerud, Ann Christin Auestad, Professor Yngve Birkelund at UNIS.

Some of the focus areas for this Steering Committee meeting were the progress of the project and the status of the working groups' deliverables. The group leaders from the working groups were present on the first day and presented progress and status of work performed so far.

During 2017 we are pleased to introduce these new part-time employees to the Arctic Safety Centre:



Presentations in chronological order are as follows:

- Anne Sølberg Ellingsen, Senior Advisor at UNIS. Her special field is academic affairs. She will be responsible for work related to develop Longyearbyen to become a “high Arctic Safety Awareness Society” and for assisting with the curriculum development.
- Dr. Markus Eckerstorfer, Researcher; Northern Research Institute NORUT. His special field is periglacial geomorphology with focus on snow avalanches in physical geography. He will be responsible for the course “Risk assessment of natural hazards in the Arctic”.
- Jørgen Skafte, Head of logistics department for Greenlandic research stations; Aarhus University. He will be responsible for work related to improve field safety at Arctic field stations and develop safety course for personnel working at Arctic field stations in close collaboration with the EU INTERACT (International Network for Terrestrial Research and Monitoring in the Arctic) II project.

The project is proud to inform you that you can meet us at the Arctic Circle Conference in Reykjavik, Iceland in 13-15th of October this year. Here we will have a break out session “The need for Arctic Safety training” with the following topics and presenters:

Name	Organization	Role	Topic
Dr. Morten Rasch	University of Copenhagen, INTERACT	Leader Station Manager forum; INTERACT II	INTERACT II and Station Manager Forum including Arctic Safety Centre participation in INTERACT II
Dr. Lars Kullerud	University of the Arctic	President of the UArctic'	UArctic' and participation in Arctic Safety Centre.
Professor Hanne Hvidtfeldt Christiansen	The University Centre in Svalbard	Departmental Leader; Arctic Geology	Using natural science data and technology for improved Arctic Field safety.
Ann Christin Auestad	University Centre in Svalbard	Project Manager; Arctic Safety Centre	Arctic Safety Centre presentation

Stakeholder management is an important part of our activities and we have worked together with several partners during this year. We started the year by presenting the Arctic Safety Centre at INTERACT II's kick-off meeting in Iceland. Here the engagement and interest for the project was promising. This was followed by a presentation at Svea, where we were part of a session with Sintef.



Project manager Ann Christin in Iceland; 26th of January 2017 and in Svea; 28th of March 2017

A collaboration meeting has been arranged between UNIS, and the Engineering (IV) Faculty at NTNU and here the Arctic Safety Centre had a central role. The project was presented and a discussion regarding further collaboration and alignment of education and research took place.

The project has also been presented to one of our partners; Norwegian Polar Institute during a workshop they had in Longyearbyen.

Arctic Safety Centre has close cooperation to our local partners. A presentation at the Preparedness Council in Longyearbyen was performed.

During spring the Standing Committee on Education, Research and Church Affairs from the Norwegian Parliament was in Longyearbyen and the Arctic Safety Centre was introduced and presented to them.



During the spring the Arctic Safety Centre was fortunate to have *Sturla Henriksen; CEO of the Norwegian Shipowner Association* give a guest lecture at UNIS. The engagement in the lecture was good and he clearly identified the topics of the center as very relevant for the Arctic.

The Arctic Safety Centre has also been involved in research. One is a project related to polar bear and human interactions. This is a research project that has just been funded and will be managed by Professor Børge Damsgård, Arctic Biology Department at UNIS, with funding from “Svalbard Miljøvernfond”.

The Arctic Safety Centre has joined as partner into a large research project proposal called DeRIVE Project (Decision Support System Platform for Risk Assessment and Emergency Response Management based on an Integrated, Visually Enhanced Big Data Model) for the EU H2020 ICT-15 Big Data Call. The proposal was submitted to the EU led by NORSAR.

- If funded we will led a work package to test the DeRIVE platform in avalanche hazards, community resilience, and for increased technical expertise, to develop new tools for analyzing and collecting data in the Arctic.

Also The Arctic Safety Centre has been asked to participate in the SARINOR (search and rescue in the high North) III project covering increased safety for operations in the Northern areas.

More information regarding status and progress for these and new research projects will follow in our next newsletter.

Below follows progress and status from the projects activities, which have been divided into several different work packages:

- Risk- and Safety theory
 - Design of Arctic safety courses for industry, tourism and academia
- Field safety at Arctic field stations
 - Pilot Course planned for 2019.
- Integration of natural science observation for improved field safety
 - Pilot Course planned for 2018
- Develop Longyearbyen to become a ‘High Arctic Safety Awareness Society’
 - Pilot Course in 2018

Risk- and Safety theory:

The overall ambition is to establish 3 master courses within the field Arctic Safety. We are also aiming for completion of master theses in cooperation with home universities in Norway or abroad. The ambition is to build on already established safety theory and combine this with real-life examples, incidents and accidents in an Arctic context. These subjects shall be open for all students but some course specific requirements may occur.

Progress of this work is good. Data is being collected from stakeholders in Longyearbyen and in Norway. Several smaller workshops and meetings have been performed.

Here is a short description of the three master subjects:

- **Management of Arctic Safety**
The course shall give the students theoretical foundations and principles regarding safety management. Meaning; utilizing necessary steps, application of methods and tools for good decision making and planning in relation to safety management. They will be given an introduction to regulations, organizational context, and barriers against loss, framework conditions and external conditions.
During the course the students shall become familiar with Risk assessments at multiple levels and different levels of incident investigation
The theory will be linked to relevant cases for learning.
- **Safe operation in Arctic conditions**
The students shall be given the knowledge how to use and interpret the Reliability, maintainability, availability analysis (RAM) method.
They shall have an understanding and knowledge of how humans and equipment perform in cold climate conditions and give a prediction of the operational condition for safe operation in the Arctic. The theory will be linked to relevant cases for learning.
- **Preparedness and response in an Arctic Context**
The students shall be given increased understanding of robust communities in the arctic context and be trained in risk awareness/perception/communication.
They shall be able to identify key characteristics of different types of undesirable events such as incidents, accidents, crises and emergencies. In addition they shall have an understanding of key challenges (individual and organizational) we may face in different types of undesired events (such as stress and stress management, information processing, coordination, centralization and decentralization in crisis management, etc.).
Also the students will be given increased knowledge regarding regulation and structure of the preparedness and response systems in the arctic including maritime preparedness and offshore and onshore search and rescue.

Integration of natural science observation for improved field safety:

The goal for this group is to work on integrating natural scientific data and methods into field safety. One of the key activities so far has been the development of the earlier mentioned approved master course, mainly for natural science and engineering students, that utilize natural science competence and data for decision making and planning related to Arctic safety. Topics such as meteorology, polar bears and other mammals, diseases (rabies, etc.), avalanches, glaciers, sea ice, permafrost and oceanography will be used in the course. This 10 ECTS master course is as earlier mentioned called 'Risk Assessment for Natural Hazards'.

Field safety at Arctic field stations:

Also to establish a safety courses for personnel working at Arctic field stations is a key ambition. Another delivery from this group is a HSE manual in this field. This work is to be performed in close cooperation with the EU project INTERACT II.

We hope to arrange a workshop in September in Longyearbyen with representatives from national and international field stations to discuss the content of the planned pilot course.

Develop Longyearbyen to become a 'High Arctic Safety Awareness Society':

We have the ambition to share knowledge between the scientific environment and the local authorities responsible for safety in Longyearbyen. Two short pilot courses were held for the population of Longyearbyen in February 2017.

- Biologic hazards safety course
- Avalanche awareness course

Arctic Safety Centre held these pilot courses as open lecture in February utilizing competence from UNIS and our partners. The interest from the population was good and we will aim to arrange two courses pr. year due to high turnover in the population.

We also aim to re-establish the field safety forum. The first meeting was held at UNIS 14th of June. Participants in this forum shared experiences and learnings from this year's season.

If you have questions or comments, please contact our project manager.

From all of us to all of you
Have a good, safe and relaxing summer!

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