

THE UNIVERSITY OF THE ARCTIC NEWSLETTER

SHARED VOICES

GoNorth! Special Edition | 2007

The Hot Arctic
Why Does the Arctic Matter?

The Changing Arctic
Climate, Economies and Peoples

The Benefits of Going North
Study and Life Opportunities in the Arctic

The United Arctic
How Institutions and Decision Makers Collaborate
to Give a Voice to the North

UArctic Shared Voices Newsletter
GoNorth! Special Edition I 2007

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The New Arctic

By Lars Kullerud, President
University of the Arctic

Many people, regardless of residency, perceive the Arctic as a wilderness of ice, polar bears, seals, reindeer, and northern lights. But what about the people who live in the Arctic? The Arctic, as defined by the Arctic Council working groups, is the homeland of some four million people; about half live in a small number of cities and the rest inhabit small settlements or villages. Close to a quarter of the Arctic population are indigenous people, many of whom still live from the land and sea.

In fact, utilization of natural resources has been, and still is, the major basis for most livelihoods in the Arctic. Fisheries, reindeer herding, hunting, and gathering local flora are the traditional activities of the Arctic population. Large-scale fishing, whaling, and exporting forestry products to the South have been dominant economic activities for centuries. Today, fisheries in the Bering and Barents seas represent a substantial portion of the global catch, and the boreal forest is still dominant in the global forestry industry. The Arctic is already an important oil and gas producing region, and estimates indicate that as much as a quarter of the world's remaining undiscovered hydrocarbon reserves are located in the Arctic. Large-scale mineral exploitation exists in many places in the circumpolar North, and the trend is toward further expansion and the opening of new mines.

Despite all this economic activity, the Arctic also includes the last remaining huge tracts of nature in the world where the ecosystem has not been influenced by modern development.

These large pristine areas represent a global asset, as well as an opportunity for new developments in eco-tourism. Several of the world's largest freshwater rivers flow into the Arctic Ocean. In both Russia and North America, parties have proposed that these northbound rivers should rather feed the freshwater-hungry southern regions. Thus, the natural resources of the Arctic are a draw for environmentalists and businesses alike.

The world faces global change where ecosystems and climate respond to human emissions and activities in a way that our modern society may not be robust enough to take. Recent research and policy actions have made it clear that the Arctic is the "canary in the mine", with faster and more profound climate change than elsewhere in the world. The Arctic experiences today the changes that the rest of the world will meet in some decades. This has severe impacts on northern ecosystems and peoples living in the North, but it also triggers changes in the Arctic that seems to have a strong amplifying effect on global climate change. Reduced snow cover increases the absorption of heat and melting permafrost releases large methane reservoirs that used to be frozen into the ground, to name a few examples. The consequence is that the North needs to adapt fast to the changing environment. Melting ice on the Arctic Ocean opens new sea routes – which may be an opportunity – some species, like polar bears, are threatened, while others may invade the North. The resource-rich Arctic has been, and will

Perceptions and myths of the Arctic

- ▶ A homeland for many indigenous peoples
- ▶ A land of discovery, where many European explorers ventured between the 16th and the 19th century; still large unexplored areas today
- ▶ A "wilderness mostly devoid of permanent human residents"
- ▶ A storehouse of resources, both renewable and non-renewable, from fish and fur to minerals and oil
- ▶ A theatre of military operations, with several nations having military bases and equipment in the Arctic
- ▶ An environmental linchpin where phenomena like climate change and pollution have devastating results
- ▶ A playing field for researchers in various disciplines, from glaciologists to anthropologists
- ▶ An ideal destination for adventure-seeking travellers
- ▶ A dreamlike place where the landscapes are pure and sublime, an escape from the urban environment

References: AHDR (Arctic Human Development Report) 2004.
Akureyri: Stefansson Arctic Institute ICARP II Working Group
11: Arctic Science in the Public Interest Science Plan, 2006

continue to be, a major provider of raw materials for the South, while, at least until now, very little of the value of these resources has remained in the North. Globally, we often speak of the North-South divide: the poorer regions of the global South provide much of the raw materials necessary to wealth-creation in the rich North. It may be fair to say that the roles of the extreme North and developing countries of the South have some similarities. The North has faced development of self governance in various forms, with the recent more independent state of Nunavut in Canada, Greenland from Denmark, and the establishment of Sámi Parliaments in the Nordic North. In the Russian North and Far East, some of the republics and oblasts have had some degree of self governance for a long time, but both regions, as well as their indigenous peoples, seem to face a development towards reduced autonomy.

In short, the North is a vital part of the world, and has a larger impact on daily life in the South than is normally envisaged by people in the South who may have a simplistic “ice, polar bear and bearded male explorers” perception of the North. The North faces huge changes and will be more critical to the rest of the world than most people today can imagine. Higher education institutions at southern latitudes may win a lot by rethinking their perceptions of the North and consider the possibility of letting faculty and students GoNorth!

“I DIDN’T KNOW ANYTHING ABOUT THE NORTH. IN MY COUNTRY, IT’S NOT IN THE NEWS, NOT ON TV. I WAS SURPRISED AT THE SIZE OF THE CITY AND THE QUALITY OF THE BUILDINGS...I WASN’T EXPECTING MALLS.”

**- VENKATA GANDIKOTA,
INDIA**

UArctic Map by Philippe Rekacewicz, Hugo Ahlenius, Veli-Pekka Laitinen



Political Cooperation in the Arctic

By Hill-Marta Solberg

Chair of the Conference of Parliamentarians of the Arctic Region

The Arctic Council and the Conference of Parliamentarians of the Arctic region are circumpolar arenas of political cooperation involving all eight Arctic countries: Canada, Denmark, Finland, Iceland, Norway, Russia and the United States. Six organisations representing the indigenous peoples in the Arctic are also closely involved in the cooperation.

After the cold war, we have witnessed a development of groundbreaking Arctic cooperation. The scientists have gone from being a tool of the military presence in the Arctic to delivering important information about the Arctic environment. The indigenous peoples in the Arctic have in a successful way found their voice in sharing with the rest of the world what they think about the impacts of the global change. The indigenous people's organisations have developed partnerships with scientists and given scientific reports new dimensions. These reports are important tools in the Arctic cooperation.

The melting of the Arctic ice cap threatens the livelihood for the polar bear and other animals and organisms dependent on ice for their survival. The average temperature in the Arctic has risen almost twice as fast as in the rest of the world during the past 50 years, and is an early warning sign for what will happen in the rest of the world. Three hundred leading Arctic researchers, together with indigenous representatives, took part in the making of the “Arctic Climate Impact Assessment” (2004) to find out how climate change is influencing the Arctic today, possible future scenarios, and the consequences for the Arctic and the rest of the world. Climate change and its consequences for the Arctic has been and still is one of the most important areas of cooperation and is one of the main priorities in the Norwegian Chairmanship of the Arctic Council.

The Arctic is rich on natural resources and the Arctic communities and settlements are largely based on the use of natural resources. It is vital that all resource utilisation is planned and carried out in a sustainable manner in order to facilitate the coexistence of activities in different sectors, including fisheries, mining, maritime transport and the petroleum industry. Norway has increasingly taken a management approach that takes into account the importance of healthy and productive ecosystems as a long-term basis for economic development.

Norway's integrated management plan for the Barents Sea–Lofoten area (2006) is based on the ecosystem approach. Its purpose is to ensure a balance between petroleum development, increasing maritime transport, the utilisation of living marine resources and the need for environmental protection in the Norwegian part of the Barents Sea.

All the Arctic countries have long experience

in managing resources in the Arctic. Through exchange of experience and knowledge, including traditional knowledge, we have the aim to develop a common approach to ecosystem-based management of the natural resources of the Arctic.

To meet the future challenges in the Arctic, it is of paramount importance to build competence among the people living in the Arctic. We are therefore very supportive of the work of the University of the Arctic. Bringing scientists in the High North together in networks, creating relevant and accessible education programs, and bringing students and researchers to the Arctic region, helps us to build sustainable Arctic societies ready to grasp to possibilities of the future.

Facts

The Conference of Parliamentarians of the Arctic Region

www.arcticparl.org

- ▶ Founded in 1993
- ▶ A parliamentary body comprising delegations appointed by the national parliaments of the Arctic states and the European Parliament
- ▶ Also involves Permanent Participants representing indigenous peoples, as well as observers

Arctic Council

www.arctic-council.org

- ▶ Founded in 1996
- ▶ An intergovernmental forum for addressing many of the common concerns and challenges faced by the Arctic states
- ▶ Eight Arctic states: Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, US
- ▶ Six Permanent Participants:
 - Aleut International Association
 - Arctic Athabaskan Council
 - Gwich'in Council International
 - Inuit Circumpolar Conference
 - Russian Association of Indigenous Peoples of the North
 - Saami Council
- ▶ Several observers, including countries, international organisations and NGO's



Reindeer Herding in a Changing Climate

By Svein D. Mathiesen, Ole Henrik Magga and Inger Marie G. Eira, Sámi University College, Anders Oskal, International Centre for Reindeer Husbandry, and Bruce Forbes and Florian Stammer, Arctic Centre, University of Lapland

Indigenous peoples in the Arctic face major challenges related to changes in their society and the northern climate. More than 20 indigenous peoples herd reindeer. There is an urgent need to document and communicate both the changes to which they are subjected and the herders' traditional knowledge related to adaptation to changing conditions.

Reindeer husbandry is practiced in Norway, Sweden, Finland, Russia, Mongolia, China, Alaska, Canada and Greenland, involving some 100 000 herders and two and a half million semi-domesticated reindeer, which graze approximately four million square kilometres in Eurasia. Reindeer herders have managed vast areas in the Arctic over hundreds of years. These areas have only recently become significant for industrial interests, including the exploitation of oil and gas reserves.

The IPY project # 399 EALÁT Reindeer Herding and Climate was initiated by Association of World Reindeer Herders (WRH), a circumpolar indigenous peoples' organisation with observer status in the Arctic Council. The study is carried out in partnership with the Reindeer Herders' Union of Russia, the Sámi Reindeer Herders' Association of Norway, Saami Council, Sámi University College (SUC) and International Cen-

tre for Reindeer Husbandry (ICR) in Kautokeino. Both the main host institutions (SUC and ICR) are members of University of the Arctic. EALÁT focuses on adaptive capacity of reindeer pastoralism in Fennoscandia and Russia to climate variability and change and, in particular, on the integration of reindeer herders' knowledge in the study and analysis of their ability to adapt to environmental variability and change. The best of both scientific and tradition-based knowledge needs to be learned jointly to provide the optimal understanding for future generations. For example, inner Finnmark is used as winter pastures by reindeer herders in Norway. This is the part of Norway where the local effects of warming of the global climate during the next 30 to 50 years are likely to be most significant. Models predict that the mean temperature and precipitation in inner Finnmark may increase by as much as 0.7 Celcius and 10 % respectively per decade during this period. All these changes are likely to affect both vegetation and snow and ice conditions and hence, the basis for reindeer husbandry.

EALÁT adopts a novel methodological approach. Reindeer husbandry has repeatedly demonstrated its ability to adapt to change. EALÁT recognises that this ability is based on knowledge embodied in the languages, the institutions of

herding, the knowledge and the actions of individual herders. We believe that integrating herders' experience and competence within the scientific method will enable us to contribute even further towards reducing the vulnerability of reindeer husbandry to the effects of climate change. In EALÁT, herders' experience and understanding are to be documented, and traditional understanding and scientific knowledge will be valued equally.

Through integrating research and teaching, EALÁT will enhance local competence building. One overall objective of EALÁT is to contribute to the building of local competence through understanding in indigenous peoples' societies. The knowledge gained will also be disseminated in circumpolar community workshops, endorsed as an Arctic Council project called SDWG EALÁT-Information. EALÁT will provide bachelor, master and PhD students with opportunities to participate in the project in Russia and Scandinavia.

Further information:
www.ealat.org
www.reindeercentre.org
www.samiskhs.no

GLOBE Program Makes IPY Relevant to Students Around the World

By Dr. Elena B. Sparrow, Director

UArctic IPY Higher Education and Outreach Program Office, University of Alaska Fairbanks

The Seasons and Biomes Project at the University of Alaska Fairbanks (UAF), also called Monitoring Seasons Through Global Learning Communities Project, engages pre-college teachers and students in climate change research to learn science and to participate in the International Polar Year (IPY). Seasons and Biomes is an expansion of the Arctic Phenology Research and Education Network project Eol # 278 recommended by the IPY Joint Committee to be included in the endorsed University of the Arctic IPY Education Outreach Cluster # 189 and is funded mainly through a National Science Foundation grant.

This IPY project uses the international Earth/environmental science Global Learning and Observations to Benefit the Environment (GLOBE) program (<http://www.globe.gov>) methods. This includes studying Earth as a system and partnering teachers and students with scientists in ongoing investigations on atmosphere/climate, soils, land cover/biology, hydrology, and plant phenology (Butler and MacGregor 2003, Sparrow, 2001, Sparrow, et al., 2007). Schools are organized by biomes and students connected to scientists in Earth system science programs i.e. the International Arctic Research Center (IARC), NASA Terra and Landsat Data Continuity Missions, as well as with Earth system scientists in other countries. GLOBE measurements will be adapted to the biomes and new ones on ice and mosquito phenology added for Arctic/northern and tropical/equatorial regions, respectively.

The first IPY GLOBE Seasons and Biomes professional development workshop was held at IARC March 22-25, 2007 on the UAF campus focused on the tundra and taiga biomes, freshwater ice freeze-up and break-up and vegetation phenology protocols, IPY, and best teaching practices.

Among the participants were 38 teachers and teacher educators who came from all over the world: rural and urban Alaska, several northern US states, and countries in the polar regions (Argentina, Canada, Estonia, Germany, Greenland, Mongolia, Norway and Switzerland.) Additionally, six GLOBE alumni (former GLOBE students who are now college undergraduates) are working with K-12 classrooms to help promote the GLOBE Seasons and Biomes project and IPY. These students from Argentina, Bahrain, Cameroon, the Czech Republic, Thailand and the US will be IPY ambassadors to their world regions, giving presentations on IPY and helping teachers engage students in collaborative IPY Earth system investigations. Students from polar and non-polar regions will be collecting, reporting and comparing data gathered from different biomes, collected through the Seasons and Biomes project as well as other reference data, and communicating with each other. Communications began with the IPY Pole-to-Pole videoconference between students from Alaska, Argentina, and Arctic and Antarctic scientists on March 5 followed by worldwide webchats and a web forum between students and scientists.

The youngest participant in the IPY GLOBE Seasons and Biomes projects and her mom, a teacher in a village school in White Mountain, Alaska



Facts

The International Polar Year 2007-2009

www.ipy.org

- Organised through the International Council for Science (ICSU) and the World Meteorological Organization (WMO)
- Fourth polar year (previous ones in 1882-1883, 1932-1933, 1957-1958)
- Covers the Arctic and the Antarctic equally
- Over 200 projects
- Thousands of scientists from more than 60 nations
- Physical, biological, and social research topics
- Focus on: Atmosphere, Ice, Land, Oceans, People, Education and Outreach

“EVERYTHING WAS DIFFERENT THAN I THOUGHT IT WAS GOING TO BE. EVERYTHING WAS BIG! BIG BUILDINGS, BIG CARS...”

-ANNA LILJEDAHL,
SWEDEN

GLOBE Alumni from left to right: Shaika from Bahrain, Tomas from the Czech Republic, Adele from Cameroon, Matt from the U.S., Watcharee from Thailand and Guillermo from Argentina. This is the first time these three girls ever saw snow



The UArctic Online Studies Catalogue: an essential tool in development

By Olav Hesjedal, Academic Advisor
Scandinavian Seminar Group

Arctic and northern issues are hotter than ever and affect everyone, not just those living in the North. The network of UArctic member institutions offers a ready-made vehicle for transmitting the results of the IPY and other research and development activities in the Circumpolar North to a wide range of students and student advisors, and to the interested public at large.

But how can students, student advisors and all others interested in Arctic and Northern issues efficiently find and evaluate existing and upcoming courses and study programs offered by higher education institutions located around the Circumpolar North in eight Arctic states? We believe that the development of a joint, online studies catalogue will provide an essential tool to find and compare study opportunities offered by UArctic member institutions, without having to scroll through a prohibitive number of web addresses.

The first phase of the catalogue development has been chaired by Field School Chair Eystein Markusson at UNIS, Svalbard, with help from Norway Opening Universities and sponsored by UNEP's Division of Environmental Policy Implementation, Education and Training Unit. Several UArctic member institutions have altogether displayed about 600 courses in the UArctic Studies Catalogue, and a pilot version of the catalogue was launched last year. The pilot can be viewed at studies.uarctic.org.

The catalogue content is generated by a web-crawler that, based on agreements with UArctic member institutions, fetches relevant information from each institution's web page, allowing

updating every 24 hours. Courses and studies can be posted in any of the languages of the Circumpolar North, although most descriptions in the first phase of the catalogue development are in English. One may search for any word present in the actual descriptions, and in different languages.

The UArctic Council has endorsed full implementation of the catalogue service to support all UArctic programs and member institutions. Unfortunately, due to lack of financial resources, further development into a high quality online catalogue that would serve as a main source for information about programs and courses offered in the UArctic collaboration has been delayed.

Now we have the pleasure to announce that Scandinavian Seminar Group – a founding UArctic member institution with its head office in Massachusetts, USA – will undertake the further catalogue development as an in-kind service to UArctic through a four-year period from 2007 on. A Catalogue Office is now being established as part of UArctic's administrative support system, parallel to the existing UArctic Academic Office in La Ronge, Canada, the UArctic Press Editorial Office in Alberta, Canada, and the UArctic Russian Information Centre in Russia.

Bearing in mind the expected, much stronger media focus on Arctic and northern issues through the International Polar Year (IPY), it is an urgent issue for all higher education providers in UArctic to have their relevant programs and courses presented in the catalogue. With funding secured through Scandinavian Seminar Group, a campaign to increase the number of

entrances in the catalogue substantially is now underway.

For the future: Bookmark Arctic Studies Catalogue, studies.uarctic.org.

Hellhynna Mountain



“IT’S AN ABSOLUTELY WONDERFUL EXPERIENCE AND THE NORTH IS AS BEAUTIFUL AS ANY OTHER PLACE IN THE WORLD, AND IT HAS EXCELLENT UNIVERSITIES. AND IT’S NOT AS COLD AS PEOPLE TEND TO THINK IT IS. RIGHT NOW, I DON’T THINK I COULD HAVE GONE TO A BETTER PLACE FOR AN EXCHANGE.”

- TYLER WOOD, CANADA

Facts

Scandinavian Seminar Group

www.scandinavianseminar.org

- ▶ Headquarters in Amherst, Massachusetts, US
- ▶ A non profit, international educational organization
- ▶ Philosophy: learning throughout life is crucial for personal growth and international exchange is imperative for the future of our world
- ▶ Goals:
 - to foster international understanding
 - to contribute toward resolving global conflicts
 - to promote environmental sustainability and protection
- ▶ Together with sister organization Scandinavian Seminar College in Denmark, co-sponsors high-level policy seminars, conferences, exchange programs, and publications
- ▶ Memberships in: the Arctic Research Consortium of the United States (ARCUS), National Association for Foreign Student Affairs (NAFSA)



People in the Arctic

By James McDonald, Associate Professor, Anthropology
University of Northern British Columbia (UNBC)

The Arctic is the homeland to many societies and cultures, some which are indigenous to the area and others which are relative newcomers. Demographically, this is a diverse population which lives in many small settlements and camps, and a few large towns and cities scattered throughout the Arctic. The northern regions of the eight Arctic nations support peoples who are farmers, labourers, reindeer herders, fishers, hunters, or bureaucrats. They include the Sámi herders, who occupy a broad region stretching from the Norwegian Atlantic coast into Russia, with similar peoples like the Komi and Kantsy, the Nenets and Enets, and others who extend the herding tradition far into Siberia. The Evenks and Yakuts are among those groups who bring the indigenous people of Siberia further east to the lands of the Chukchi and the North Pacific Ocean. The Siberian Yupik, Inupiat, Inuit and Athabaskans continue the great Arctic circle of indigenous peoples, bringing it over the top of North America to join the Kalaallit of Greenland. Finally, there are the Norse people in Iceland, Norway and Sweden, the Finns in Finland, the Slavic peoples in the Russian north, and the non-aboriginal Greenland Danes, Canadians and Alaskans.

Their ways of life are rich in many different heritages that present a fascinating perspective on the diversity of humanity. But their qual-

ity of life is threatened in many ways by global forces such as climate change and pollutants, and by local forces such as policies for cultural assimilation or social changes associated with industrialization. The survey of the political, social, and cultural conditions in the Arctic Human Development Report showed how, when indigenous peoples had more control of their lives, they were healthier, wealthier, and their cultures were stronger. Indigenous peoples of the north protect their cultures and their rights throughout the Arctic with research on traditional knowledge that provides powerful insights into the many complex and changing ecological factors that affect them. Northerners are increasingly partners in this research, as in the case of the Beverly and Qamanirjuaq Caribou Management Board, an Aboriginally lead co-management group working to conserve a Canadian caribou herd. Two examples of the movement towards inclusiveness are the Sámi struggles for self-determination and the work of the Russian Association of People of the North for indigenous rights. Similarly, a common desire for appropriate access to higher education contributed to the establishment of UArctic which, through its various programs, supports Arctic aspirations locally, nationally, and internationally. Each of our member institutions offers unique and challenging opportunities for students to study the Arctic, its peoples, and their northern issues.



Facts

University of Northern British Columbia

www.unbc.ca

- ▶ Prince George, British Columbia, Canada
- ▶ Founded in 1990 – Canada's first university in a generation
- ▶ Latitude and longitude: 53.55 N, 122.47 W
- ▶ 4200 students per year
- ▶ Main campus in Prince George, with regional campuses in Terrace, Fort St. John and Quesnel
- ▶ Affiliation with the Nisga'a House of Higher Education
- ▶ 70 % of UNBC students are from the North
- ▶ 11 % are Aboriginal
- ▶ Five academic departments:
 - College of Arts, Social and Health Sciences
 - College of Science and Management
 - Continuing Studies
 - Graduate Studies
 - Northern Medical Program
- ▶ Arctic and Northern expertise: Northern Medical Program, Northern Studies, Child Welfare Research Centre, Northern Land Use Institute, Women North Network / Northern FIRE: The Centre for Women's Health Research, John Prince Research Forest co-managed with the Tl'azt'en Nation.





"THE WILDERNESS, THAT'S THE MAIN REASON FOR WHY I'M HERE IN ALASKA. I'M AN OUTDOOR GIRL, AND HERE I'VE BEEN DOING SOME DOG MUSHING, CROSS-COUNTRY SKIING, DOWNHILL SKIING AND SNOWSHOEING TRIPS."

- HILDE PORSANGER, NORWAY





Summing up the Borealis Conference 2007

By Jørn E. Gåsvær, Information Officer
Finnmark University College

The first Borealis conference ever took place on 5th – 7th of March at Finnmark University College, Alta, Norway. It was an inspiring event, being attended by more than 100 participants from Russia, Finland, Sweden, Canada and Norway, as well as several local students. Covering the conference theme, “Building capacity for sustainable places in the Circumpolar North”, the speakers spread knowledge over a great number of areas, contributing to the distribution of relevant competence all over the circumpolar area.

Interesting & inspiring

“It’s been an interesting conference with inspiring presentations,” Elena Abramenko, of the Polyarnye Zori city administration, stated. Raziya Garayshina, architect of the Murmansk oblast administration, was happy about the ecological issues of the conference, being concerned about regional questions on sustainability. The two North-West Russian women both picked up knowledge which, they said, would be important to implement in their work for the future.

Pleasant experience

“We are very happy about the conference, which

has been a pleasant experience.” That was the opinion of Snorre Sundquist, regional director of The Norwegian State Housing Bank (Husbanken). He was especially pleased with having been able to present the role of Husbanken as a relations developer, and characterized the conference as a “good idea having fallen on fertile ground.”

25 lectures

During the 1 ½ days of the Borealis conference, the speakers presented 25 different lectures about issues ranging from “What if the North really mattered” to “IKEAsation of the North” and “Multicultural Meeting grounds in Northern Norway”. Six of the speakers came all the way from Canada - impressing, considering the great distance. A panel debate with the key note speakers effectively summed up the issues having been presented.

Important issues

Throughout the conference, important issues such as indigenous people’s rights, the vulnerability of the eco-system, the image of the North as seen from the South and many others were widely presented and debated. Most speakers



Facts

Finnmark University College

www.hifm.no

- ▶ Finnmark, Norway
- ▶ Latitude and Longitude: 69.9776 N, 23.3718 E
- ▶ Founded in 1973
- ▶ 2000 full-time students
- ▶ 40 international degree students
- ▶ 30 foreign exchange students
- ▶ 300 staff
- ▶ Three faculties:
 - Faculty of Education and Liberal Arts (Alta)
 - Faculty of Business and Social Work (Alta)
 - Faculty of Nursing (Hammerfest)
- ▶ Arctic and Northern expertise: Nature-based Tourism, Border Business Studies, Arctic outdoor life activities, Management of local development in arctic areas, Norwegian language, culture and history

gave a vision of optimism on behalf of the North in the future, being supported by several success stories.

Some work left

However, the conference showed that the North still has some work left to become an area filled with sustainable places, despite natural resources like oil, gas and fish, and the focus on the North, especially in Norway and Canada. As Steinar Pedersen of the Sami Trade and Development Centre said, there is a need for a meeting place for scientists, trade and regional government to follow up the questions of the conference.

Ultimately, most commentators agreed that the conference had been of significance in the development of sustainable places in the North, and that there definitely should be a Borealis conference 2008.



Oil extraction, Melkøya plant, Snøhvit field, near Hammerfest, Norway | Photo by Eiliv Leren, Statoil ASA

Facts

Arctic Human Development Report

Available online at: www.svs.is/AHDR/

- ▶ The first comprehensive assessment of human well-being covering the entire Arctic region
- ▶ Mandated under the Arctic Council's 2002 Ministerial Declaration as a priority project
- ▶ Goal: to provide a "comprehensive knowledge base" for the work of the Council's Sustainable Development Programme
- ▶ A centrepiece of the Icelandic Chairmanship of the Arctic Council (2002-2004)
- ▶ Contains contributions from over 90 scientists located in all of the Arctic states
- ▶ Coordinated by a secretariat based at the Stefansson Arctic Institute, Akureyri, Iceland
- ▶ Offers a wide-ranging scientific assessment of achievements and challenges relating to human development in the Arctic

Human Development in the Arctic

By Joan Nymand Larsen, Senior Scientist
The Stefansson Arctic Institute

Arctic societies are facing rapid and profound changes involving environmental processes, cultural and industrial developments, and political changes with associated stresses on human well-being. There are Arctic communities where resilience and cultural continuity are severely compromised, and where rapid cultural change, loss of identity and lack of self-esteem is leading to health problems, high rates of alcohol and drug abuse, family dysfunction, violence, and identity loss. The Arctic Human Development Report (AHDR) details these challenges, but also highlights many success stories in the Arctic, such as the ability to retain a clear sense of cultural identity under considerable pressure, the use of advanced technologies in areas such as telemedicine and education, and the creation of innovative political and legal arrangements (AHDR, 2004).

In response to these and other current challenges, the Arctic Social Indicators (ASI) project - a follow-up project to the AHDR, with its secretariat located at the Stefansson Arctic Institute - seeks to devise a limited set of indicators that reflect key aspects of human development in the Arctic to help facilitate the tracking and monitoring of human development in the region (Larsen, 2006).

ASI has identified six domains for the development of social indicators, of which three were highlighted by the AHDR as being particularly prominent elements of human development in the Arctic: fate control, or the ability to guide one's own destiny, cultural integrity, or belonging to a viable local culture, and contact with nature, or interacting closely with the natural world. Some of the key challenges facing Arctic residents today deal with the impact of climate change and rapid transformations of subsist-

ence practices, and the preservation of distinct languages. Indigenous people maintain a strong connection to the environment through traditional activities, and the approach to life in many resource-based cultures is linked to the natural world and a living based on spirituality.

Education, health/demography, and material well-being are likewise key ASI domain areas for the construction of Arctic social indicators. The selection of suitable indicators of material well-being for example, requires a close look at the complexity of the Arctic economy. It is composed of the industrial economy with large-scale resource exploitation, the traditional economy, and a transfer sector. Resource exploitation is characterized by outside control and resources moving out of the Arctic region. Revenues from regional production are often large in comparison with transfer payments, suggesting that dependence on transfers could be reversed if Arctic regions had the political power to collect taxes from large-scale resource exploitation.

The ASI project, 2006-2008, covers the developmental stage in a long-term effort to measure and monitor human development on an integrated basis in the circumpolar Arctic. ASI is endorsed by the Arctic Council.

By Lake Mývatn, Northern Iceland | Photo by Anna Sirina





Frozen Ground in the Arctic in Svalbard

By Hanne H. Christiansen, Associate Professor
Physical Geography, The University Centre in Svalbard (UNIS)

Frozen Ground is widespread in the northern hemisphere – where about half of the land surface freezes and thaws every year – and about 20 % of the territory has continuously frozen ground, also called permafrost (Fig.1). Permafrost is ground (soil, sediment, rock and ice) that remains at or below 0°C for at least two years. It occurs both on land and beneath off-shore arctic continental shelves. The main permafrost research focus is on better assessment of the influence of climate variations on the permafrost thermal state.

In the northernmost town of the world, Longyearbyen, the University Centre in Svalbard (UNIS) is providing unique all-year-round research and training possibilities for studying the frozen ground of the high Arctic and its associated landforms, processes and sediments. Our research focuses on improved understanding of the climatic influence on the periglacial landscape development, in the about 40 % of the Svalbard landscape not covered by glaciers. Here, we have direct access to several permafrost landforms such as ice-wedges (Fig. 2), pingos (Fig. 3) and rock glaciers (Fig. 4) and study their activity and development in the

maritime high Arctic climate in Svalbard. We live in a very active high relief landscape with permafrost in steep slopes and therefore have frequent snow avalanches (Fig. 5) and rockfalls (Fig. 6), which we monitor and relate to meteorological conditions to model future landscape development under different climatic scenarios.

In Svalbard and northern Norway we so far only have few boreholes providing permafrost temperature information. But during the International Polar Year research project called 'the Permafrost Observatory Project: A contribution to the thermal state of Permafrost, TSP', we will establish a number of new boreholes and equip them for continuous temperature monitoring. Part of the observatories will also be new periglacial landform monitoring.

A special service, called the International University Courses on Permafrost, have been launched by the International Permafrost Association for international students interested in studying frozen ground. Through this service, students can find all information about the presently 136 courses on frozen ground in science and engineering given around the world, both as

classroom and field courses, and both at bachelor and masters level. More information can be found at www.geo.uio.no/IPA.

If you are interested in obtaining more information on activities for young permafrost researchers, have a look at the Permafrost Young Researchers Network, PYRN, at www.awi-potsdam.de/pyrn.



Figure 1. Permafrost distribution on the northern hemisphere.

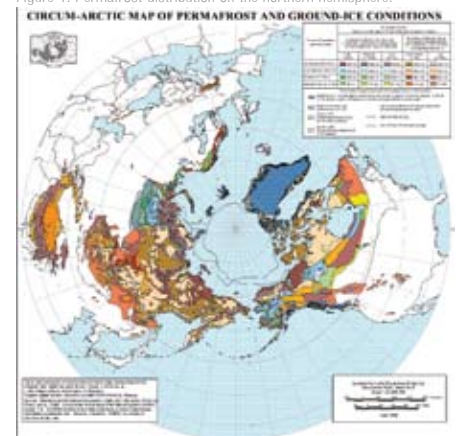




Figure 2. Top of an ice-wedge being studied in a section from Adventdalen, 4 km from the University Centre in Svalbard, UNIS | Photo by Hanne H. Christiansen.



Figure 4. Rock glaciers below the 374 m high Vardeborg mountain in western Svalbard | Photo by Hanne H. Christiansen.



Figure 3. Pingo in inner Adventdalen, Svalbard, with an icefall that forms every winter due to spring activity | Photo by Hanne H. Christiansen



Figure 6. Rockfall in the Longyearbyen valley. April 2007 | Photo by Hanne H. Christiansen.

Facts

University Centre in Svalbard – UNIS

www.unis.no

- ▶ Longyearbyen, Norway
- ▶ Latitude and Longitude: 78.13 N, 15.38 E
- ▶ Founded in 1993
- ▶ 310 students – 125 full-time equivalents
- ▶ 50 % international students from 25 different nations
- ▶ 80 staff and faculties
- ▶ Four Departments:
 - Arctic Biology
 - Arctic Geology
 - Arctic Geophysics
 - Arctic Technology
- ▶ Arctic and Northern expertise: established to take advantage of the high Arctic location of Longyearbyen to provide university-level education in Arctic studies and carry out high quality research.

Photo by Juha Sarkkinen



Facts

Luleå University of Technology

www.ltu.se

- ▶ Luleå, Sweden
- ▶ Latitude and Longitude: 65.36 N, 22.90 E
- ▶ Founded in 1971
- ▶ 13 500 full-time students
- ▶ 220 international students
- ▶ 794 staff and faculties
- ▶ Faculties:
 - engineering
 - arts and social sciences
- ▶ 13 academic departments and more than 69 research topics

LULEÅ
TEKNISKA
UNIVERSITET

Facts

- ▶ GoNorth!
- ▶ A way for UArctic member institutions to promote the unique educational opportunities in the North
- ▶ Main goal: get southern students interested in learning about the North, from the North and in the North
- ▶ 12 partner institutions in seven countries
- ▶ Launched in 2005 as an Erasmus Mundus project
- ▶ Now the newest addition to UArctic's mobility programs

Facts

Sykttyvkar State University

<http://www.syktysu.ru/english/>

- ▶ Sykttyvkar, Komi Republic, Russian Federation
- ▶ Latitude and Longitude: 61.40 N, 50.49 E
- ▶ Founded in 1972
- ▶ More than 5500 full-time and 2000 part-time undergraduate students
- ▶ 300 graduate students
- ▶ International students from all over the world
- ▶ 16 faculties
- ▶ More than 40 academic departments
- ▶ 475 instructors



www.uarctic.org/gonorth



Erasmus Mundus



Information for you is provided through funding from the European Union, Erasmus Mundus programme

GoNorth: a multitude of opportunities for students and partners

By Olga Bakhireva, Director

Syktyvkar State University International Relations Department



Syktyvkar State University (SSU) is situated in the capital of Komi – and the city of Syktyvkar – the very heart of the North, surrounded by beautiful forests and not far from astonishing tundra and the Great Ural Mountains. Each year, SSU hosts 7000 students from across the Komi Republic and Russian Federation.

Romantic, poetic and...convict Komi land is the place of great intercultural exchange and contradiction. I would say that Komi is the mother of the ancient komi people and the virtuous stepmother for thousands of soviet political prisoners ...

In my mind, it was natural for Syktyvkar State to join GoNorth, as the main purpose of the program was to represent the interests and rich culture of the Circumpolar North.

I believe that the GoNorth program is an excellent opportunity to share life experience, historical background and personal views. Such programs allow us to discover not only our surroundings, but – and more importantly – inside

of us. Opening the borders of our minds allows us to open our hearts. We then get unique chances to feel the souls of other countries and to fall in love with them.

GoNorth is a hoisting crane which put together slabs of different institutions' interests and priorities. The program helps to build strong cosmopolitan links between many universities and educational organizations. Therefore, all the partners should act as one team of builders who work carefully with bricks of ideas and intentions. Some of the builders are experienced and know a lot, and some, like me, are newcomers. However, I know now that I should not feel embarrassed. I should learn. I should learn for my own benefit and for the benefit of the whole team. It is very important to realize that. And it takes time.

Participating in GoNorth brought me the opportunity to take part in EAIE and NAFSA, which means not only participating actively in the field of international academic activities, but meeting absolutely outstanding people. EAIE and NAFSA

are big international multilingual hives, where you feel as an alien for not more than a couple of seconds and then start feeling right at home.

Such conferences combine both formal and informal sides of intercommunication, providing chances to find new partners and to make friends. There, I also realized that, prior to the conferences, marketing is half of the project success (or failure).

The GoNorth stands at both events attracted everyone's attention. This was due to a new promotional item: Finnish snowballs made of rice and white latex, an unusual imitation of the feeling of real snow and a good example of a marketing miracle .

The slogan for the program is: **Cool studies in Cold climate with Warm people.** This is what the Circumpolar North really is: the heat of the hearts on the ice.

Life on the Edge of the World

By Mikkel Berg

Student Representative, GoNorth

Shared Voices asked three students who've gone from the South to the North: What is life like beyond the Arctic Circle?



This place is only a 45 minute walk from Tromsø city. In the north, nature is always at your doorstep | Photo by Mikkel Berg

Dragica Vidovic, Joep Aarts and Stian Johansen are from very different places in Europe – respectively Montenegro, the Netherlands and Oslo, Norway. They met after moving to Tromsø - a city at 69 degrees North, on the shores of the Arctic Ocean.

An extraordinary place

For Stian, who hails from northern Norway, the move had to do with roots. For Dragica, her

studies in Scandinavian language and indigenous Sámi culture made northern Europe a natural place to be. Joep simply wanted a change and decided to go for what he had a vague feeling was "an extraordinary place".

"Of course I met a lot of prejudices from people who had never been to the north," he says. "Those prejudices turned out to be totally out of place. You can say a lot about Tromsø, but it sure isn't boring. And the nature is even more overwhelming than I expected."

A sense of freedom

The northern nature is highlighted by all three. Not only are the "clichés about the Northern lights and midnight sun" right, according to Dragica, but the summers are often surprisingly warm too. And if you enjoy hiking in the mountains, cross-country skiing or ice-bathing, such recreational activities are literally just outside your doorstep in many northern cities.

"The combination of living in a city and being able to explore its desolate surroundings, makes living in the north something special. It gives you a vague sense of freedom, of living on the edge of the world," Joep says.

Clubbing and festivals

Though the North is well known for its nature, its intense cultural life tends to surprise those

who move there.



Rumours of the hospitality and party spirit in the North were very true, Dragica confirms | Photo by Lone Dybdahl

"There is a great variety of places to hang out at, a lot of events – film festivals, music festivals and such – and it's very easy to get involved in this rich social life, a contrast to many other places. People are very friendly and easy-going," Dragica says. "In smaller university cities like this, it is often uniquely easy to meet people and develop friendships fast," Stian confirms.

Travel opportunities

Northern cities are often linked well together, both culturally and with infrastructure. The distance from Iceland to Greenland is small, Yukon borders on Alaska, and living in one North European city makes the other ones readily accessible. Dragica has travelled in northern Finland, and northern Russia has caught the interest of

both Joep - who calls it "the most intriguing place in the North"- and Stian, who has even chosen Russia as his field of study.

"My favourite activity is getting together with other students interested in all things Russian, to enjoy Russian cuisine and drinks - vodka in particular. A purely academic interest, of course", he explains with a smile.

- Don't hesitate!

As for those who are pondering to move up north, Stian suggests that they bring an open heart and leave their prejudices at home – but bring warm clothes for the winters. "Also, prepare your senses, your minds and your cameras," Dragica adds.

Joep's most important advice, however, is simply this: Don't hesitate! "Just make up your mind and get ready to experience things that other places simply can't offer."



Joep (to the right) one second before he goes one-on-one with the Arctic Ocean | Photo by Ole Losvik

University of Oulu Campus



Change in the Arctic: will the Arctic as we know it survive?

By Kirsi Latola, Program Coordinator
Thule Institute, University of Oulu

Global change in the Arctic affects both humans and ecosystems. It influences people in many ways, affecting, for example their way-of-life (both income and recreation) and the economy, infrastructures and environment they live in.

However, the most visible changes are probably seen in nature; winters have become milder, there are more occasions of extreme weather events, the area covered by sea ice is reduced and sea stays open longer than it used to in the fall. The reduction of the polar ice opens new Arctic sea routes: the North-East Passage could be open to year-round commercial shipping within a decade, and the North-West Passage could follow. The new routes are seen by many people (especially in the field of politics and trade and industry) as an opportunity for trade and use of natural resources such as oil and gas, for instance, since they are a viable economic alternative to the southern route through Suez or Panama.

However, the effects these increased shipping activities would have on sea mammals and other sea animals, including the fishing industry – a major source of living and income of both indigenous and northern peoples in the Arctic – are not yet known. Some possibilities include disturbance on animal feeding and breeding, possible oil spills, accidents and increased contaminants in the water.

Changes in the sea ice cover and structure also have direct effects on people living in the Arctic; the ice has become more difficult to "read" and more people are lost at sea.

It is not just humans who are affected and animals are also facing the change. The breeding of some Arctic mammals that raise their puppies on the ice, such as walrus and polar bears, has become more difficult and unusual behaviours, for example drunken walrus puppies, have been recently observed as a result. Changes in Arctic animal population affect the whole culture and wellbeing of the indigenous peoples, whose diets are often traditionally based on sea and Arctic animals such as the walrus.

Another question is: how are phenomena happening in the Arctic, such as ice melting and feedbacks by ocean circulation and increased snow free areas, affecting the global climate? The bio-geo-chemical cycles hold an important role on a global scale and they should be studied jointly by experts, including biologists, atmospheric scientists and paleoclimatologists, for research on topics such as smelting permafrost, ice sheets and glaciers, fjord systems, terrestrial and fresh water and marine ecosystems.

Under the pressures of global change, including

the changes in the ecosystems and use of natural resources and other economic and societal forces, the major issue facing us is: Will the Arctic survive in its present form?

UNIS | Photo by Sigmund Spjelkavik



UNIVERSITY of OULU
OULUN YLIOPISTO

Facts

University of Oulu

www.oulu.fi

- ▶ Oulu, Finland
- ▶ Latitude and Longitude: 65.01 N, 25.28 E
- ▶ Founded in 1958
- ▶ 16 661 student
- ▶ 445 foreign exchange students
- ▶ 345 foreign degree students
- ▶ 2057 admissions
- ▶ 3079 staff
- ▶ 242 professors
- ▶ Six Faculties
- ▶ Research in Northern and Environmental Issues:

Thule Institute (3 research programs and related graduate instruction):

Global Change in the North

Northern Land Use and Land Cover

Circumpolar Health and Wellbeing



“Going North”: a student’s story

By Dominique Naud, Communications Intern
UArctic International Secretariat

One could think that there’s nothing more different than a bustling Indian metropolis and a Finnish city located only kilometres away from the Arctic Circle. However, India-born Venkata Gandikota has no trouble feeling at home in Rovaniemi.

Gandikota, who grew up in Hyderabad, – a city of over six million inhabitants in the south of India – moved to Rovaniemi over two years ago and still loves the capital of Lapland. “Rovaniemi is one of the most beautiful places I’ve seen”, he says.

Holder of a Bachelor degree in chemical engineering from Osmania University, India, and a Master’s degree in environmental engineering from Texas A&M University, US, Gandikota got interested in ice and climate research after reading Richard Alley’s book **The Two-Mile Time Machine: ice cores, abrupt climate change, and our future**.

In the book, Alley, a participant in many expeditions to Greenland and Antarctica, explains how ice caps record climate history, how to read those records in cylinders of bored ice,

and what they reveal about changes in climate. “It got me interested,” explains Gandikota, who then started to look for programs all over the world that would allow him to “get a foot in the door” of the polar research field.

The Arctic Studies Program (ASP) at the University of Lapland seemed to be the perfect way to reach this goal, as it was inexpensive and allowed him to study the North without having to start his graduate education all over again.

The ASP (www.ulapland.fi/ASP) is a multidisciplinary program providing comprehensive knowledge of the physical, environmental, social and cultural aspects of the Arctic.

The fact that the university also had the Arctic Centre (www.arcticcentre.org), a unit which conducts internationally high-level multidisciplinary research, was a major incentive for Gandikota.

Never losing sight of his aspirations to work with some of the world’s top Arctic researchers, Gandikota approached the Arctic Centre’s John Moore as soon as he completed the one-

year program and eventually got a spot on the researcher’s ice and climate research team. “It wasn’t easy, I had to work hard for it,” he says, adding that, at first, his engineering background made some people sceptical he could work as a researcher.

Although Gandikota doesn’t know what the future holds for him, he says it would be nice to keep living in the North. “You can get used to the cold winters”, he jokes, adding that most Indian people would think of the North as somewhere where “it’s so cold that you can’t survive.”

Now that he has discovered “the real North” for himself, Gandikota encourages other southerners to do the same. “Go for it!” he advises students who are considering moving to the North. “It will allow you to get a better perspective of this special region, a personal feel.”

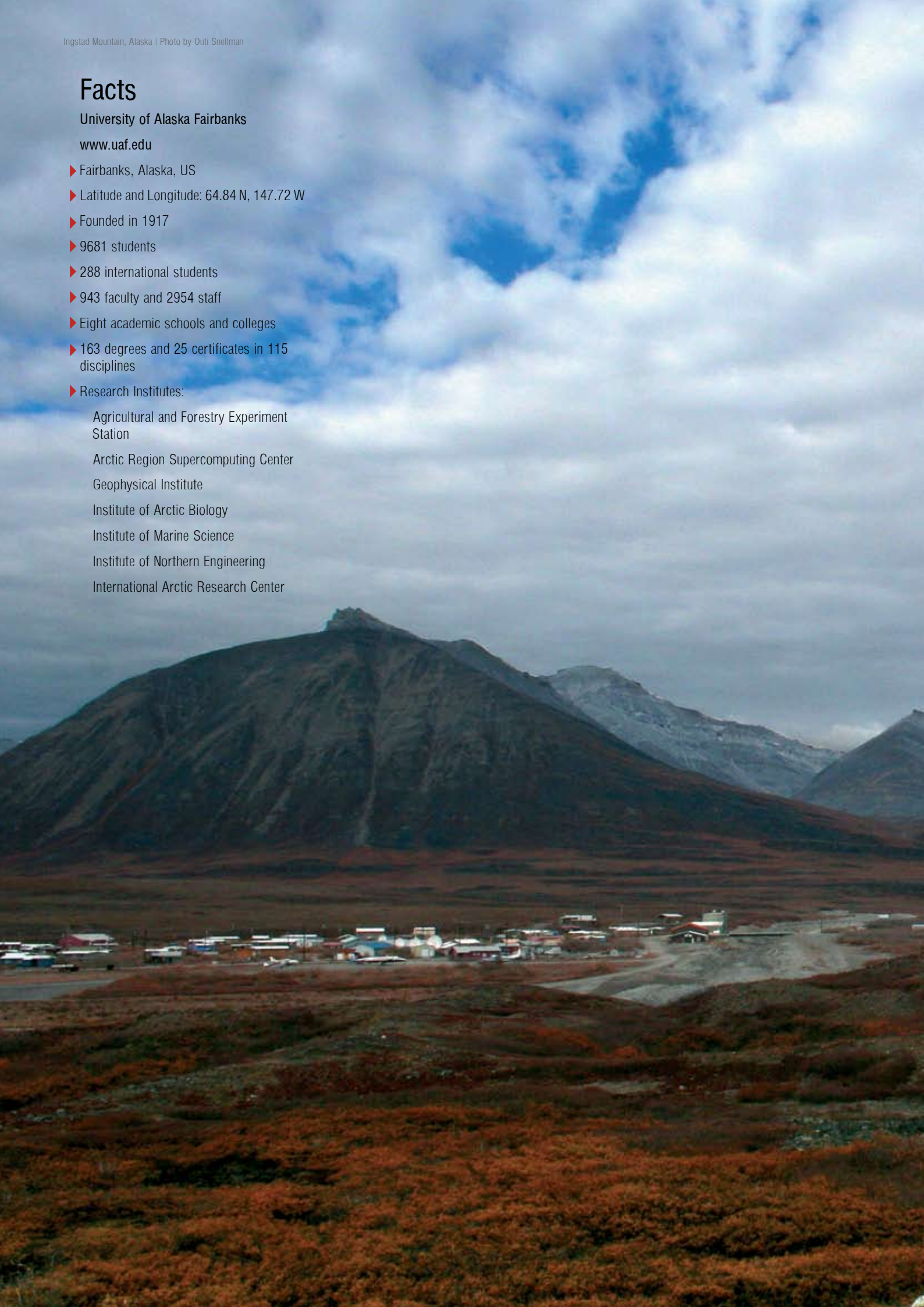
Gandikota hopes to start his PhD at the University of Oulu in the fall.

Facts

University of Alaska Fairbanks

www.uaf.edu

- ▶ Fairbanks, Alaska, US
- ▶ Latitude and Longitude: 64.84 N, 147.72 W
- ▶ Founded in 1917
- ▶ 9681 students
- ▶ 288 international students
- ▶ 943 faculty and 2954 staff
- ▶ Eight academic schools and colleges
- ▶ 163 degrees and 25 certificates in 115 disciplines
- ▶ Research Institutes:
 - Agricultural and Forestry Experiment Station
 - Arctic Region Supercomputing Center
 - Geophysical Institute
 - Institute of Arctic Biology
 - Institute of Marine Science
 - Institute of Northern Engineering
 - International Arctic Research Center



UAF Researchers Seek to Understand Effects of Climate Change and Pollutants on the North and its Peoples

By Larry Duffy, Anna Godduhn, Sarah Trainor, Craig Gerlach and Maribeth Murray
University of Alaska Fairbanks

Both climate change and pollutants such as hydrargyrum (Hg) and Persistent Organic Pollutants (POPs) appear in all Arctic ecosystems and impact plants and animals as well as the people that subsist on them. Northern peoples, especially those who rely on wild food diets to meet their nutritional requirements, are disproportionately impacted but are not justly compensated for their risk. Most of these pollutants and anthropogenic, drivers of climate change, originate in developed and developing industrial centers in the south and are transported to northern latitudes by atmospheric and oceanic circulation. In addition, climate change will impact the pollutant pathways that UAF scientists and students are now working to characterize.

Interdisciplinary research groups led by Todd O'Hara (Biology), Craig Gerlach (Anthropology), Terry Chapin (Biology), Gary Kofinas (Natural Resource Management) and Sarah Trainor (Northern Engineering) are working to characterize pollutant levels in Alaska, and also to understand the impact that climate change and pollutants have on both health and culture of Alaska's subsistence users. Anna Godduhn and other students in UAF's unique graduate program on Regional Resilience and Adaptation (RAP) are pioneering community-based participatory research in Alaska with impacted communities like Northway and Fort Yukon.

UAF faculty, RAP students and UAA IPY Post Doctoral Fellow, Kathleen Graves, are developing methods to document community dependence on subsistence foods, lifestyle and practices related to subsistence harvest and consumption, and how they relate to community health in a context of climate change. They are analyzing risks to food security from mercury contamination, documenting antioxidant levels in diet and identifying differentially impacted sub-groups. In terms of vulnerability analysis, they are designing and testing strategies for risk communication and management while creating the capacity and a framework for continued collaboration with tribal entities. Faculty, post doctoral fellows and graduate students are also including and mentoring both UAF undergraduates and community interns.

While biologists and biochemists have traced current contaminant pathways, Maribeth Murray (Anthropology) in concert with Larry Duffy (Chemistry), Amy Hirons (Nova Southeastern



Clearcut private forest bordering the Sompio Strict Nature Reserve in Sodankylä, Vuotso 1999 | Photo by Veikko Vasama

U), Peter McRoy (Marine Science) and graduate students Holly McKinney and Cody Strathe are working on tracking non-anthropogenic Hg inputs to marine systems through analysis of archaeological remains. A major issue of this research is to address whether present-day arctic changes are unprecedented, or whether previous periods, such as the Medieval Warm Period and the 1920-40's warming, resulted in similar changes.

UAF is developing a time series of observational information on sea ice, marine resource use (subsistence), and marine food web structure that can be used in combination with high-resolution climate and historical information in order to understand the system linkages and feedbacks. UAF's strengths in environmental sci-

ence, anthropology, interdisciplinary resilience and adaptation studies, and collaborative biomedical research, such as neurotoxicology, create a unique UArctic opportunity for researchers and students.





The Northernmost University in the World a Leader in Arctic Marine Science

By Astrid Revhaug, Head of International Office,
and Gerd Bjørhovde, Pro-rector, University of Tromsø

Although a small institution by global standards, the University Tromsø is a large institution in the circumpolar world. The university offers around 100 programs of study ranging from medicine, law and science to economics, psychology, social science, fishery science and the humanities.

In addition, the UTromsø houses the University Museum (Tromsø Museum was established in 1872), a University Library and two Centres of Excellence, one in Theoretical Linguistics (CASTL), from 2003, and one in Theoretical and Computational Chemistry, from 2007. As of 2007, three of Norway's 14 recently opened Centres for Research-based Innovation are located in or connected with the University of Tromsø: one in telemedicine (together with the University Hospital of North Norway), one in ICT (led from Trondheim), and one in marine resources management, MabCent (see below).

The Norwegian College of Fishery Science, UTromsø – a national and international centre of competence on fishery science and marine resources

The Norwegian College of Fishery Science, which is one of the UofTromsø's six faculties, covers a number of subjects within fisheries and aquaculture: marine resources and ecology, breeding, fish health, marine biotechnology and food safety. The marine subjects are connected to skills within business economics, management, marketing and international relations.

Of particular relevance to UArctic students on the lookout for an international education is the Master's Degree Program in International Fisheries Management. The program started in the autumn of 1998 and accepts 20 students each year (15 international and five Norwegian students). It has been very successful, attracting students from all over the world. Of the 113 graduates by 2006, 48 came from African countries, 29 from Asia, 26 from European countries (including 10 from Russia and 10 from Norway), and 10 from the Americas. A major aim of the

program is to provide a truly interdisciplinary education, combining primarily economics and biology with additional courses in technology, principles of organisation, and law.

MabCent; Marine bioactives & drug discovery – a UTromsø Centre of Research-based Innovation (CRI).

The key idea of MabCent is to investigate organisms from the marine arctic environment in order to develop new drugs and pharmaceutical products. Marine organisms of the Arctic possess certain unique physiological and biochemical features due to their adaptation to the cold and dark environment of the Arctic seas. MabCent research activity is geared towards finding out whether these unique qualities may be efficient in, for instance, reducing inflammation, suppress tumors or stimulate the immune system.

MabCent will concentrate on Arctic marine bacteria, algae, and several kinds of arthropods.

The academic head and director of MabCent is

Trond Jørgensen, Professor at the Norwegian College of Fishery Science, the University of Tromsø.

ARCTOS, an International Network for Marine Ecology in the Arctic

ARCTOS consists of a large active network of six Norwegian, six Nordic and 22 International institutions. Founded by scientists at APN, UNIS, NPI, IMR (Tromsø) and NCFS-UoT, the network increases cooperation on basic and applied research and education supported by a world class Arctic research infrastructure.

ARCTOS is a consortium of scientists in Arctic marine productivity and ecology founded by Akvaplan-niva AS (APN), The University Centre in Svalbard (UNIS), Norwegian Polar Institute (NPI) and The University of Tromsø (UoT: Norwegian College of Fishery Science (NCFS) and Faculty of Science).

The goal of the ARCTOS Network is to build a leading research group in Arctic marine ecology in Europe. Marine ecology has always been strong in Tromsø and Longyearbyen, but has been fragmented and there was little cooperation between research groups. After an invitation from Stig Falk-Petersen (NPI) and Paul Wassmann (NCFS) in 2001, scientists from APN, UNIS, NPI and NCFS-UoT agreed to create a research network to increase cooperation on research, utilization of infrastructure, outreach activities and teaching. In 2002, regular monthly meetings between students and scientists were initiated to facilitate communication on scientific topics as well as planning and strategic issues. By 2003, ARCTOS became a viable structure with a virtual PhD school, and workshops and symposia as well as several joint research projects awarded by The Research Council of Norway (RCN) and European Union. In 2004,

the formal structure was strengthened by the official approval of ARCTOS by APN, UNIS, NPI and UoT, and a board was formed with representatives from each institute. In early 2005, the UoT awarded the ARCTOS PhD-school to the Department of Aquatic BioSciences (NCFS) and, in summer 2005, the Tromsø department of the Institute of Marine Research (IMR) joined the network.

Today ARCTOS is a leading network within Arctic marine ecology, running the PhD school, producing a high scientific production rate, maintaining and strengthening an already large international contact network, and with access to world-class infrastructure to conduct leading-edge Arctic research. ARCTOS members have distinguished themselves within university education, government advice, and private consultancy and are responsible for many large ongoing basic research projects. The network also initiates and conducts applied science for industry and government policy-makers, as well as outreach elements towards education and the arts through the ARCTOS Applied Science Forum (AASF).



Facts

University of Tromsø

www.uit.no

- ▶ Tromsø, Norway
- ▶ Latitude and Longitude: 69.40 N, 18.56 E
- ▶ Founded in 1968
- ▶ Six faculties
- ▶ 6000 students
- ▶ 1800 employees
- ▶ 70 nationalities on campus
- ▶ 15 master's degree programs taught in English
- ▶ Numerous English taught courses at bachelor and master level
- ▶ PhD programs in all main subject areas
- ▶ State-of-the-art and high-tech campus buildings

**"NORTHERNERS ARE THE COLOURFUL
FIVE PERCENT OF THE PLANET. [THEY ARE]
UNIQUE, HAVE INCREDIBLE DETERMINATION,
STRENGTH, RESOURCEFULNESS AND STRONG
LINKS WITH THE ENVIRONMENT."**

- KIRSTEN MACDONALD, CANADA



Tromholt Photo Collection Takes us Back to the First IPY

By Dominique Naud, Communications Intern, UArctic International Secretariat

The third IPY is an opportunity to reflect on the progress that has been made in Arctic research, both in the technological advances and in the way the Arctic and its peoples are perceived. A collection of photos from Kautokeino at the end of the 19th century provides a visual example of the evolution in the role of indigenous peoples in Arctic research since the first IPY.

The exhibition, a result of a cooperation between Sámi University College and the University of Bergen, is part of the series of events happening during the IPY 2007-2009, which kicked off in March. On display at Finnmark University College during the Borealis Conference in March, the exhibition attracted the attention of participants from all over the world.

For Kristine Nystad, Sámi University College's vice-rector and one of the instigators of the project, the photos are also very important on a historical, local level. "We [the people of Kautokeino] have a good documentation of our culture and people from 1880s and we are able to compare and see the changes in our culture in 125 years. We have also the opportunity to see our ancestors," she says, noting that family

and family history is very important for Sámi people.

Sophus Tromholt, originally from Denmark, was a pioneer of scientific research on the northern lights phenomenon who taught nature studies and mathematics at the University of Bergen. In connection with the IPY of 1882-1883, he received a five-year scholarship from the Norwegian state to go to Kautokeino and run an observatory.

Using the observatory and its camera as a way of getting in contact with the people of Kautokeino, he started taking portraits of them. His collection, which is now owned by the University of Bergen library, contains approximately 50 portraits and is now recognized as an important artifact documenting the people of Kautokeino and their culture.

In light of the current IPY, the photos are also an indicator of change since 1882-1883. "In 1882-83, we were objects for Sophus Tromholt's 'research', but in IPY 2007-2009, we experience for the first time in the history ourselves as researchers, or subjects in polar research projects. To become a subject in polar research makes a big difference for us and offers an opportunity to highlight our traditional knowledge and our language and to contribute to sustainable development in the Arctic in research and education," explains Nystad.

The current IPY will provide many opportunities for indigenous people to do so, as it includes, for the first time, a human dimension with a focus on changes in indigenous peoples' socie-

ties. Many indigenous organizations, such as the International Centre for Reindeer Husbandry, the Association of World Reindeer Herders and the Resource Centre for the Rights of Indigenous Peoples, have been made responsible for IPY projects. Many of Tromholt's photos appear in the official Indigenous Peoples Polar Year two-year calendar, which is available through IPY.

Resources, Economies and Development in Arctic Communities

By Rasmus Ole Rasmussen, Associate Professor, Roskilde University

Arctic communities are witnessing major cultural, political, economic, and environmental changes. In this process, they are under the growing influence of large industries, an increasing degree of income transfers, and growing national and international interdependencies. Therefore, the Arctic is today confronted with large-scale extractive industries such as oil and gas production, mining and industrial fishing. During the last decades, tourism has added to the economic diversity, taking advantage of the vast and spectacular landscapes, the diverse wildlife, and the multifaceted social and cultural activities offered by the inhabitants of the Arctic.

There are clear expectations regarding further expansion of these and other industries in the future, both from outside and from inside the arctic communities. At the same time, it is recognized that these activities are generating waste and pollutants, which – with airborne and waterborne pollutants originating far to the south brought to the Arctic – are also influencing environmental conditions, as the fundamental conditions for human life in the Arctic. Similarly, tourism tends to show adverse effects both to the environment and to communities.

This development, therefore, simultaneously faces the vulnerability of both the natural and the human environments. On the one hand, the resilience of Arctic ecosystems with limited capacity for ecological restoration influenced by various constraints, among others the severe climatic conditions. And on the other hand the socio-economic and cultural structures of contemporary Arctic societies which are closely connected to the different types of exploitation of resources, and therefore also exposed to the characteristics of boom-and-bust cycles. Resource exploitation may generate good jobs for a number of years, but as the non-renewable resources are depleted or the renewable resources are changing, influenced by natural cycles, the local workforce may become obsolete. Professional training, individual qualifications and skills may also become outdated, and may be no longer relevant in connection with new economic activities. These vulnerabilities of both the environmental and social systems are clearly enhanced by the ongoing climate change.

In several Arctic regions, most of these activities are promoted and supported by external

sources of capital; they are subject to decisions made with no influence from local communities or authorities, and are first and foremost related to world markets, as opposed to the local communities in which they are established. There are extensive cases throughout the Arctic of situations where the benefits rarely remain in the region, flowing instead toward shareholders and governments outside the Arctic.

The exploitation of renewable and non-renewable resources, however, is also of key importance for providing an economic basis for the Arctic communities. Some of the benefits, such as wages and contracts for local enterprises, are retained, and this wealth, therefore, provides an alternative to dependency on former economic relations, enabling the option of abandoning former colonial relationships.

Photo by Outi Snellman



Facts

Roskilde University

www.ruc.dk

- ▶ Roskilde, Denmark
- ▶ Latitude and Longitude: 55.39 N, 12.05 E
- ▶ Founded in 1972
- ▶ 8000 students
- ▶ 700 researchers and lecturers
- ▶ 250 technical / administrative staff
- ▶ Six academic departments
- ▶ Basic undergraduate programs in Humanities, Social and Natural Sciences
- ▶ Graduate Studies:

28 regular disciplines enabling more than 300 different combinations

15 international master's programs offered

- ▶ Arctic and northern expertise:

NORS – North Atlantic Regional Studies: A research unit with expertise in comparative studies in socio-economic development of Arctic and Northern communities

ERR – Environment, Resources and Regions: A research group with expertise in coastal communities and historical and contemporary fisheries studies



[GOING TO ICELAND] “MADE ME REALIZE THE IMPACT THAT CLIMATE HAS ON CULTURE. I THINK THEIR RESILIENCY, RAMPANT INDIVIDUALISM, AND SELF-RELIANCE REFLECT A LONG HISTORY OF HAVING TO SURVIVE DIFFICULT WEATHER. ALSO, THE SENSE OF FAMILY AND COMMUNITY OF ICELAND IS REFLECTED THROUGHOUT THE CIRCUMPOLAR REGION.”

- NATASHA LETCHFORD, CANADA

Knowledge and Power in the Arctic: the building of a northern and Arctic research and education profile

By Pierre-André Forest, ISC Program Coordinator, University of Lapland

Located at the Arctic Circle, the University of Lapland, the youngest and northernmost university in Finland, was founded in 1979. A few years later, at the start of the so-called “Arctic Boom” in international cooperation, the university’s Northern Institute for Environmental and Minority Law (1985), and Arctic Centre (1989) were established. It was not long after that, amidst the development of such processes as the Arctic Environmental Protection Strategy (a.k.a. the Rovaniemi Process), Arctic Council, and UArctic, that the city of Rovaniemi and the University of Lapland became known as centres for circumpolar scientific and international co-operation.

In 1992, through the influence of these developments and with a growing multidisciplinary research staff, the Arctic Centre launched the Arctic Studies Program (ASP), which has since become the core of northern and Arctic studies at the university. Following the merging of The Northern Institute for Environmental and Minority Law with the Arctic Centre in 1997, research synergies were created and courses on governance issues in the Arctic were added to the ASP curriculum.

In 1999, the university’s active involvement in the creation of UArctic led to the founding of the Circumpolar Coordination Office (CCO), and the University of Lapland has proudly hosted the UArctic Secretariat ever since. While instrumental in the development of the Bachelor in Circumpolar Studies (BCS), in 2002 the syl-

labus of the introductory bachelor-level course (BCS 100) was integrated into the program curriculum of the ASP, and in 2003 Arctic Governance was introduced as an Advanced Emphasis. Since then, the university has provided the entire BCS structure through on-site delivery. Today, many courses in the ASP have relevance to such disciplinary subjects as International Relations, Law, Tourism, Russian Studies, and Environmental Studies.

Photo by Timo Lindholm, Fotoplan ky



Integrating research and education has always been a key objective, and in 2003 the Arctic Centre introduced the Arctic Graduate School (ARKTIS), a national school that provides graduate education and researcher training for young multidisciplinary researchers focusing on northern and Arctic issues. In 2004, to further the quality and relevance of its multidisciplinary research, three research professorships in global change, sustainable development, and environmental and minority law were created at the Arctic Centre.

In 2004 continued integrative efforts lead to the introduction of the two-year Northern Resources master’s programme, with the Faculty of Social Sciences providing major subject studies in International Relations, Administrative Sciences, and Sociology. To build on this experience, efforts are currently underway to create an interdisciplinary joint-degree program, and we are also actively involved in helping develop the UArctic’s graduate area.

As a member institution, the development of the Finnish-Russian Barents Cross Border Univer-



Photo by Veli-Pekka Laitinen



Facts

University of Lapland

www.ulapland.fi

- ▶ Rovaniemi, Finland
- ▶ Latitude and Longitude: 5.02 N, 25.47 E.
- ▶ Founded in 1979
- ▶ 4700 full-time students
- ▶ 350 international students
- ▶ 22 ARKTIS PhD students (23% foreign international students / 60% female)
- ▶ 650 staff and faculties
- ▶ Faculties:
 - Art and Design
 - Business and Tourism
 - Education
 - Law
 - Social Sciences
- ▶ 13 degree and non-degree study programs in English (2005-2006)
- ▶ 41 BCS courses (2005-2006)
- ▶ Arctic and Northern expertise:
 - Arctic Centre: over 30 scientists from natural, social sciences and law
 - Arctic Studies Program

sity started in 2005, with the main aim to establish several joint master's programs leading to double degrees in, for example, the fields of Comparative Social Work, Information Systems, and Circumpolar Health and Well-being.

In an effort to further integrate a broad research strategy, in 2006 the faculties and the Arctic Centre adopted a program for Excellence on Environmental and Social Change in the Arctic and the North. To showcase and develop the role they have in international networks and multi-disciplinary Arctic and northern research, the first outcomes of this project was to organise the conference on Knowledge and Power in the Arctic which was held in April 2007.

With a northern profile that touches on all activities, the University of Lapland seeks to continue to stand as one of the leading centres of northern research and education in the circumpolar world.



Facts

Murmansk Humanities Institute

www.mginet.ru

- ▶ Murmansk, Russia
 - ▶ Latitude and Longitude: 68.58 N, 33.05 E
 - ▶ Founded in 1994
 - ▶ 2200 students
 - ▶ 70 permanent academic staff
 - ▶ Five faculties
 - ▶ Mobility during the 2005-2006 Academic Year:
 - 17 outgoing students
 - 2 incoming students
 - 2 outgoing teachers
 - 2 incoming teachers
 - ▶ Participation in international projects and programs:
 - A member of the University of the Arctic (north2north, BCS, GoNorth)
 - EU projects: Barents Educational Network
 - Exchange programs: FIRST, FIRST-SOS NET, FIRST-Barents, north2north
- I've been doing my present job in the interna-

East-West Collaboration in Education Beneficial for Russian Students

By Mikhail Smirnyakov, Head of International Relations Office
Murmansk Humanities Institute

tional office of Murmansk Humanities Institute (MHI) for a few months only. Nevertheless, I'd like to share some of my impressions with you. As a schoolteacher, I've actually been involved in the international academic cooperation since 1992. Therefore, I'm able to look back on all the changes and results that took place in the area in almost two decades.

About 20 years ago, when the iron curtain fell down and the Cold War was over, there was an immense interest in Russia (or, to be more exact, in what was then the Soviet Union). I know that well enough from my own experience, because in the frame of cooperation between schools I was giving some lectures on Russian history to Norwegian students. With time, the interest experienced towards Russia became less exciting and more calm and practical and, of course, some stereotypes and prejudices were broken. I believe it is cooperation in the sphere of education that had contributed to this process in the best way since it's a very humanistic sphere dealing with educating the young generation. In such a process, there is no place for stereotypes as they are not typical of young people at all.

Working in the International Relations Office of MHI now, I understand pretty well the benefits of participating in international educational projects and programmes for our students. First of all, I'd like to point out their educational effect especially in learning foreign languages as

a regulatory requirement to be included into exchange programs. It is not only English (that goes without saying), but Norwegian, Swedish and Finnish as well. In comparing the present situation with learning foreign languages with what we had some years ago, one can see tremendous progress.

Every year, more than 20 students from MHI take part in long-term exchange programs - which is not bad at all for a nongovernmental institution of our size - and many more participate in other activities such as learning in summer schools, taking BCS courses, etc. Getting knowledge through exchange programs is sure the main but not the only benefit of such cooperation. Getting new life experience and becoming acquainted with other cultures and traditions is quite relevant itself because it facilitates mutual understanding and trust. Having gone through such experiences, young people are more open-minded, more ready to cooperate and to face serious challenges in different spheres of life. This is particularly relevant here in the northern region with its exciting prospects.

Sharing at the Core of UArctic's Success

By Outi Snellman, Director of Administration and University Relations
University of the Arctic

The University of the Arctic (UArctic) celebrated its fifth anniversary in 2006. What started in 2001 as a small community of people and institutions with common goals has now become a network of over 100 higher education institutions and other organizations from all over the Circumpolar North.

Together, UArctic's members have more than 40 000 academics and over 600 000 students. It's the sharing of their resources, both human and material, that's behind the success and constant growth of UArctic.

Through its various programmes, UArctic allows higher education institutions in the North to share their expertise on northern issues and to ensure the future of Arctic science, an area which will without a doubt continue to gain importance on a global level in the years to come. Through their engagement in programs, the members work together for the sustainable development of the circumpolar region.

With mobility programs such as north2north and GoNorth, member institutions can offer their students opportunities to experience life in a different culture and they can welcome students from other parts of the North who bring with them priceless cultural and academic knowledge. GoNorth is also an opportunity to get southern students interested in the Arctic and to show them the expertise in northern institutions.

The Circumpolar Studies Programme is a way for undergraduate students to acquire relevant knowledge about the environment they live in, no matter where they are. During the 2006 academic year, more than 1000 students from 27 institutions in seven northern countries were enrolled in Circumpolar Studies courses, online or on campus.

The sharing of knowledge between members of UArctic doesn't, however, only take place on the undergraduate level. Two of UArctic core programs - the Field School and the PhD networks - are targeted towards graduate students. In 2007, UArctic is also consolidating its plans for UArctic Masters. For the Chair of the UArctic Field School, Eysteinn Markússon, developing the graduate area will be a way to strengthen the UArctic network even more by creating more opportunities and benefits for close collaboration between members. "Many of UArctic members are small in size and see strong potential in cooperation with other members on graduate education, as this sharing of resources would allow them to offer more and better graduate education," he says.

The sharing of knowledge about the Arctic is not only beneficial for students, but also for Arctic researchers and educators in the member institutions. The UArctic Thematic Networks al-

low them to be part of an open and constant dialogue on issues of shared interest to members, including issues like Global Change, Social Work and Local and Regional Development in the North.

**"HERE IN ROVANIEMI,
IT'S REAL, NOT JUST
ONLINE STUDIES.
NOW I KNOW MORE
ABOUT THE NORTHERN
TERRITORIES, PEOPLE
AND CULTURE."**

- ANNA USHNITSKAYA, RUSSIA

In addition to strengthening the existing links between researchers, UArctic also brings together important players in the area of northern higher education. On March 14, 2007 was held the first UArctic Rectors' Forum meeting at Dartmouth College, Hanover, US. The Rectors' Forum is another way UArctic members can unite their voices to increase their presence and impact on a global circumpolar and international level.

The sharing of knowledge, opinions and resources in order to empower the North is at the core of UArctic's values, and therefore can not only be seen between its members, but also at an internal, organizational level. UArctic is a borderless, decentralized organization, which functions thanks to the collaboration of geographically dispersed offices, working closely together on a daily basis. These 12 offices are hosted by member institutions in six northern countries - Canada, Finland, Iceland, Norway, Russia and the US - and they each have a specific mandate, from program coordination to information management. The close collaboration between offices is another key to UArctic's success: dedicated staff from across the Circumpolar North unite their expertise, their resources and energy every day to fulfill UArctic's mission of empowering the North through accessible and relevant education for Northerners.

With UArctic's constant growth and evolution, the power of its network will only gain strength, adding to the meaning of the motto "With Shared Voices." With the collaboration of its growing membership and of its offices, UArctic will continue to develop programs which encompass both conventional academic and traditional indigenous knowledge systems, for the benefit of northerners and their communities.

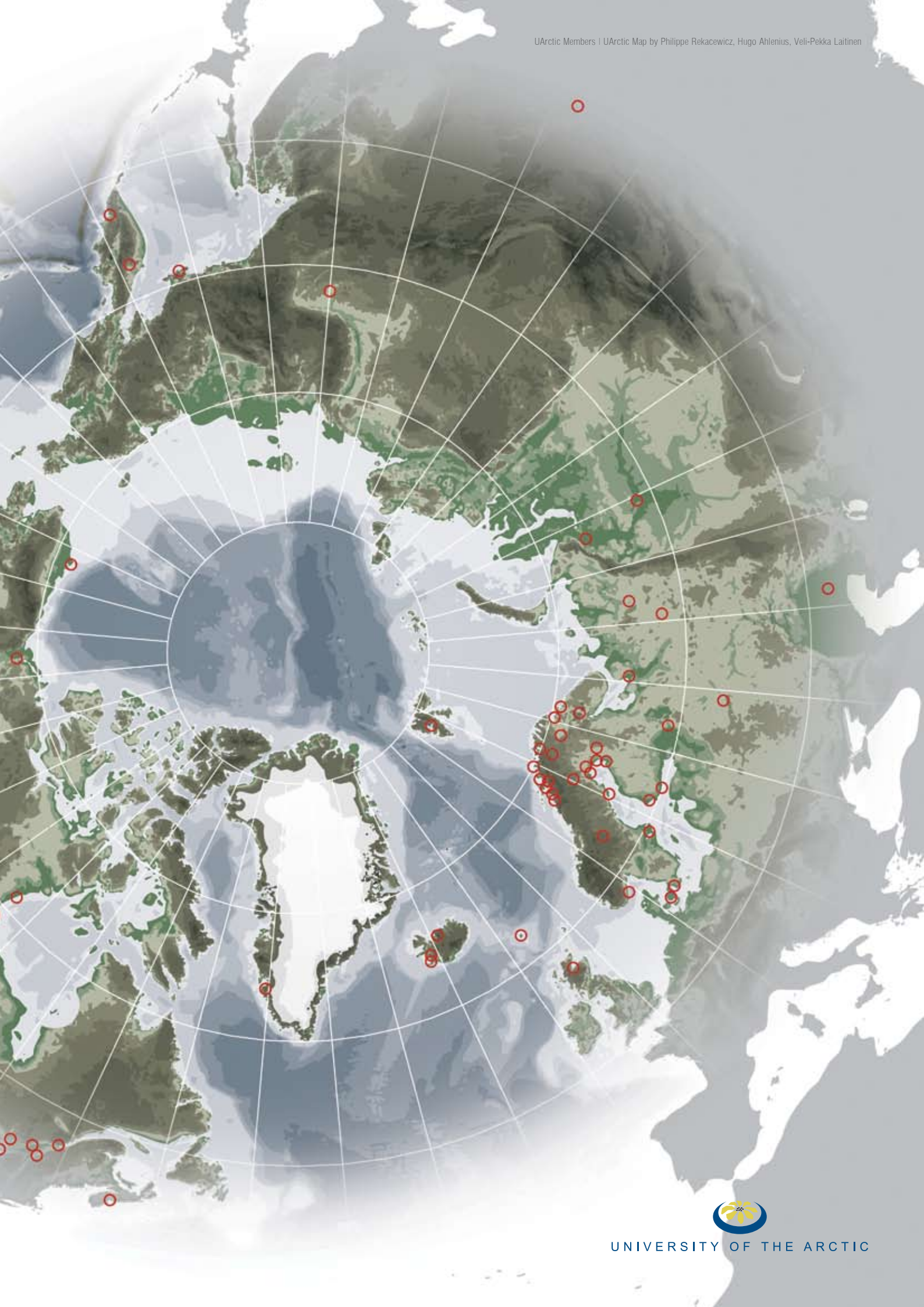
Facts

University of the Arctic

www.uarctic.org

- ▶ Over 100 members – higher education institutions, colleges, research institutes, other organizations
- ▶ Across the Arctic 8 countries: Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, US
- ▶ Founded in 2001
- ▶ Programs in:
 - Undergraduate Studies
 - Graduate Studies
 - Mobility
 - Knowledge and Dialogue
- ▶ 12 offices located in six northern countries
- ▶ Over 600 000 students and 40 000 academics in all member institutions combined
- ▶ An Online Studies Catalogue, which allows students to search for study opportunities offered in a wide array of fields throughout the Circumpolar North in many languages: studies.uarctic.org







The Kinnvika Project Builds on Legacy from Previous Expeditions

By John Moore, Senior Scientist, Arctic Centre, University of Lapland & Veijo Pohjola, Associate Professor, Physical Geography, University of Uppsala

The Kinnvika IPY project is the main Nordic terrestrial IPY project. In contrast to most IPY projects, Kinnvika is based in one particular area – Murchison Bay, Nordaustlandet, Svalbard; the northernmost island in the Nordic Arctic sector which is 90% ice covered. The multi-disciplinary and multi-national initiative has many projects, each having individual goals, but well integrated common themes (www.eld.geo.uu.se/IPY/projects). The spectrum of projects, from geosciences to the humanities, investigates how the environmental and anthropogenic dynamics have changed using a variety of data sources: expedition logs and photographs, proxy climate data from ice, lake and sea sediment cores, and dynamic studies both on terrestrial as marine ice. Historical remains in the field and in archives from a succession of cultures of whale

hunting, trapping, exploration and mineral exploitation are abundant on Nordaustlandet especially at natural harbours and good hunting grounds of the past. Historical archaeology, including pioneering arctic marine archaeology, will be combined with scientific investigations of, for example, soil chemistry, erosion and local biological impacts from humans.

A unique facet of the project is the historical expedition legacy that we are building upon. The expedition base is the location of a “settlement” on Svalbard –it comprises nine wooden huts that were constructed in 1957 by a Swedish-Finnish-Swiss IGY (International Geophysical Year) expedition. That expedition itself was inspired by even earlier expeditions, going back as far as Nordenskiöld and the first IPY. The IGY expedition was of a strongly natural science focus, with strong emphasis on the large ice caps of Nordaustlandet, which are the largest Northern Hemisphere ice bodies outside Greenland and Iceland. The importance of these ice bodies was unsuspected until the 1957 expedition. In fact, previous expeditions onto the ice cap had seriously underestimated both the thickness of the ice, and the amount of snow fall that accumulated on their summits. Both these key parameters were in error by a factor of 10 or more, ice thicknesses measured by seismic means were 350-600 m which, together with the large amount of snowfall meant that the ice

caps were not likely to be short-lived bodies, but long-lasting important reservoirs of fresh water. It is difficult nowadays to grasp the significance of such basic findings, and the shock that they must have caused to the scientists 50 years ago when they analysed their data. If we discover anything of similar significance to our understanding of the climate and the fate of the cryosphere, then the expedition will have more than paid for the resources and effort put in to making it happen.



The base in 1957



Present day view of the huts | Photo by John Moore

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Erasmus Mundus



UNIVERSITY OF THE ARCTIC

