2013 ANNUAL REPORT

PROJECT INVENTORY

Introduction

This section will present an overview of ongoing projects within the Joint Committee framework and achieved results related to the three overall priorities:

1. Access to U.S. education institutions for Greenlandic students;
2. Improved English learning in Greenland
3. Traineeships for Greenlanders in the U.S.

These priorities were established at the 2011 Washington meeting and confirmed at the DVC meeting January 2012. At the last DVC meeting in January 2013 it was agreed to improve the structure of the Joint Committee, to accommodate a more transparent and flexible project approval process.

Currently Joint Committee has 11 initiatives and projects of which 2 were finalized in 2012. All information listed in this report is based on status reports given by project leads. All current projects have submitted progress reports.

To present the reader with a more complete understanding of the positive economic and social impacts and benefits of the Joint Committee projects, these impacts will be highlighted.

Please note, that the Annual Report is a status report on progress of active projects, and hence not on final goals.

On behalf of the Joint Committee,

Kai Holst Andersen
Chair of Joint Committee
Nuuk, September 27, 2013

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Progress on Language and Education

TOEFL

Increasing internationalization has been observed at the Greenland Business College in Nuuk over many years. This is partly due to facilitate the opportunity for students to study abroad in the English speaking countries such as the United Kingdom, Canada and the US. In order to seek admittance at foreign colleges, Greenlandic students will most likely be required to pass a Test of English as a Foreign Language (TOEFL). More than 6000 institutions and agencies in 110 countries rely on TOEFL scores to select students with the English skills needed to succeed. The TOEFL covers all facets of English proficiency, including a test of spoken English. Due to the Greenland Business Schools work in Joint Committee and ETS.org, the TOEFL has been available at the Greenland Business College since January 2009.

The program does not receive funding as it charges the users for the services. The program gives Greenlandic people the opportunity to gain enrollment at US educational institutions. Hence, it meets the priority on improving the access to US educational institutions for Greenlandic students (and people in general).

The program has been marketed in the Business Schools monthly newsletter "NI news".

As of July 2013 Greenland Business College has conducted more than 20 succesful TOEFLs. Various other dates for TOEFL testing are available online on the Business School's website http://ninuuk.gl/e-laering-ikt/toefl

The TOEFL program at the Business School is a benefit to the Greenlandic public as it makes it possible to take the TOEFL test in Greenland as oppose to travel to Denmark or Sweden.

Student Advising Efforts in Greenland in 2013

In accordance with the Education and Language Group's decision to increase focus on student advising the US Embassy has intensified its advising efforts and student interaction over the last 12 months in close cooperation with relevant institutions and organizations in Greenland and Denmark.

Representatives from the US Embassy and the Fulbright Commission / Denmark-America Foundation have conducted two advising sessions for Greenlandic students in Denmark in cooperation with Avalak, the Greenlandic student organization in Denmark. They met in February and June of this year, in Copenhagen and Horsens respectively, to inform students about study possibilities in the United States and about the internship program at the American Embassy. One result of these meetings is that we now have our first ever Greenlandic intern at the US Embassy in Copenhagen. This intern will be working in our Political / Economic Section for the next six months.

As discussed at our previous committee meeting the US Embassy has dedicated a part of our website to Greenlandic students. We have gathered all current, relevant information about studying in the U.S. here in order for the students to get a quick and easy overview of their options: http://denmark.usembassy.gov/gl.jc.study.html

The US Embassy is in the planning stages of a visit by the Executive Director of the Fulbright Program, Ms. Marie Mønsted, to Nuuk —hopefully sometime this fall— for consultations with the institutions of higher learning and advising sessions with students and potential applicants to the Fulbright/DAF program. The Embassy will help coordinate and cover the costs of this visit.

American Corner in Nuuk in 2013

The US Embassy in Copenhagen also continues to develop the American Corner unit at Eskimo Slottet in Nuuk. It has a close and very positive working relationship with the resident librarian and there are plans to sponsor new electronic equipment and additional books for the corner in order to facilitate the young people's access to information about the United States.

English Language Training Programs in Greenland in 2013

The Embassy continues to work with the business schools in Nuuk and Qaqortoq in support of their very popular vocational training programs in English for adult learners. The courses are tuition-free evening classes that end with a test and a diploma for those who pass. They are sponsored by the Embassy but organized and taught by the local business school teachers, and everyone involved are very proud of their great success.

International Visitors Leadership Program

International Visitor Leadership Program (IVLP): Nineteen Greenlanders have participated in the US government-sponsored International Visitor Leadership Programs, spending up to three weeks in the United States. Greenland government

officials, academics and business persons have participated, learning about U.S. systems and networking. Total US contribution: US$140,500. Moreover, pending Washington DC budgets, we expect 4 participants from Greenland to participate in 2014. After their travel, and for the next Joint Committee, we will update this portion to reflect their visits.

Scientific Progress

IGERT: Polar Environmental Change Student Training Program

With a focus on understanding the causes and consequences of rapid environmental and social change in Greenland, the goal of the Dartmouth IGERT program is to train a new generation of scientists who have an interdisciplinary view of climate change; appreciate the societal and ethical implications of their research; employ a synthetic understanding of the contributions of traditional knowledge to polar studies; and who have a shared responsibility to ask research questions that are relevant to and include the participation of peoples of the North.

Sources of funding is US National Science Foundation IGERT (Integrative Graduate Education Research Traineeship) Program (grant from the NSF Division of Graduate Education to Dartmouth, 2008-2014), Institute of Arctic Studies and the Dickey Center for International Understanding at Dartmouth College

The Institute of Arctic Studies has supported the Dartmouth/ University of Greenland exchange program since its inception in 2008. Dartmouth sees this exchange as a foundation for a long-term partnership with Greenland that will continue beyond the NSF funding window for IGERT. Support is provided to cover tuition, room and board and local costs for 1-2 students from the University of Greenland to attend one academic term at Dartmouth College. The Greenlandic student is enrolled in two Dartmouth courses of their choosing. They also conduct ongoing research under the supervision of Greenland faculty while taking advantage of the library resources and faculty expertise at Dartmouth. The Greenlandic students also work closely with the Dartmouth graduate students who will spend 5-6 weeks in Greenland during the IGERT Field Seminar. This has proven to be an invaluable opportunity for everyone involved. This partnership promotes greater understanding between U.S. and Greenlandic students and has fostered greater faculty cooperation between Dartmouth and Ilisimatusarfik.

Dartmouth graduate students and faculty have shared classroom and field instruction with JSEP (Joint Science Education Program) and Greenland Science Field School students at Summit Station and at the KISS facility in Kangerlussuaq. In 2013 Dartmouth students worked with JSEP students at Summit on studies of snow deposition and ice core interpretation and at Kangerlussuaq they made presentations and led field trips explored glacial history, permafrost soils and carbon cycling, aquatic ecology, and climate change. In previous years, when scheduling has allowed Dartmouth students have presented at the Meet the Scientist series at Katuaq, Nuuk.

The Institute of Arctic Studies Greenland Blog is a place where Dartmouth students share their research and their experiences with Greenlanders with a global community. The Dartmouth and Greenlandic students through the IGERT blog (http://dartmouthigert.wordpress.com) and the use of other social media are creating a network of young people who will be important to the future of Arctic research and education.

Dartmouth and IGERT have funded 25 U.S. graduate students to come to Greenland to learn how to conduct and share science in partnership with Greenlanders and other northern peoples. Together with the Greenlandic students who have experienced the liberal education curriculum at Dartmouth, we believe a new kind of scientist is being trained, one who understand the social and cultural responsibilities of conducting research with indigenous peoples of the north.

Achieved goals and milestones so far are: Direct engagement between U.S. science graduate students and Greenlandic high school students where active learning and inquiry based science exercises are stressed; Improved cultural understanding between U.S. and Greenlandic students; Creation of new interdisciplinary scientific research focused on understanding rapid environmental change in Greenland; Creation of lasting institutional and personal relationships between Dartmouth and Greenland institutions.

All graduating IGERT Ph.D. students are required to provide copies of their publications to the Greenland Government. The web page of the Institute of Arctic Studies links to important reports and other activities that are of mutual interest.

Kangerlussuaq Science Field School: 28 June – 9 July

Sixteen students and six teachers experienced a variety of field work and scientific inquiries. Examples of field experiences include: making discharge and sediment load measurements of the Watson River in Kangerlussuaq, conducting a biodiversity census (grasses and shrubs) near Russell Glacier, and setting and then measuring ablation stakes on the ice at Point 660. The students worked with scientists from Pennsylvania State University and Dartmouth College in the United States as well as from the University of Copenhagen and the Danish Technical University – DTU (including PhD student Aviaja Hauptmann, from Greenland). The students worked through online SPRINTT activities about glaciers, made botanical illustrations as they learned about Greenland flora, and practiced making linear models for analyzing data on Arctic sea ice extent. Both Geocaches and Earthcaches were created by JSEP 2013.

Not all activities were science-based. Another very important aspect of JSEP 2013 is cultural: students shared traditional foods, games, and favorite stories and movies with each other during the "US – Fourth of July", "Danish", and "Greenlandic" nights. Although English was the primary language used, there were continual impromptu lessons in Danish and Greenlandic.

JOINT SCIENCE EDUCATION PROJECT 2013

Science Education Week, 10-19 July

Eight students and four teachers continued with the second part of JSEP: Science Education Week. The highlight of this part of JSEP was the trip to Summit Station, located at the top of the ice sheet. The group departed for Summit on July 12 and returned to Kangerlussuaq on July 16; both trips were aboard an LC-130 ski-equipped plane, flown by the U.S. Air National Guard. Every student and teacher was afforded the opportunity to visit the cockpit during flight. While at Summit Station.

One of the primary science activities centered on the back-lit snow pit, from which students took samples, both for their own study of snow density as well as to assist Dr. David Noone in gathering additional samples for isotope-analysis at the University of

Colorado at Boulder. In addition, the students helped to launch a weather balloon, drill out a snow/firn core (and learned about the GISP2 ice core), and take samples from the clean snow area. IGERT Fellows (graduate students from Dartmouth College) led lessons on albedo, GPS, glaciers and ice sheets. During meal time and after the work day, students and teachers had the opportunity to talk with science groups and staff to learn about their research, jobs, and interests.

Both before and after the Summit trip, the students and teachers continued to explore the area around Kangerlussuaq and to work with additional scientists. For example, Dr. Kurt Burnham from the High Arctic Institute gave a lecture on peregrine falcon and gyrfalcon studies he and his team are conducting, and the students accompanied him and his team to a nesting site where each student and teacher was able to hold a 4-day old falcon chick. The group also spent a day with Dr. Lisa Pratt and Sarah Cadieux from Indiana University. The JSEP students helped them to collect methane samples from lakes near Russell Glacier, which were analyzed by the IU scientists back at Kangerlussuaq.

Throughout the entire JSEP, students and teachers wrote about their experiences which were posted on www.polartrec.com/expeditions/joint-science-education-project-2013/journals. This link can be shared with anyone interested in learning more about JSEP 2013.

In addition, students created videos and posted them on YouTube (e.g., about Russell Glacier http://www.youtube.com/watch?v=tLgaG4qmL1g). Student groups made presentations to community members as well.

Microorganisms associated with arctic agriculture

Arctic agriculture is a new frontier. The warming trend of the climate helps agriculture development, but also makes the environment more hospitable for transmission and survival of plant diseases. The goals of this project are to explore the microbial diversity in Arctic environment and harness the beneficial microorganisms in the development of an environmentally benign means of agriculture development in Greenland and Alaska Since the approval of the Joint Committee in 2012, no funding has been provided to this project. Monetary funding obtained in 2011 from national American and Danish sources has been exhausted. The project needs funding to train leaders in agricultural development in Greenland.

A spin off of this project is the recommendation to supplement expensive chemical fertilizer with sheep waste in potato production. This recommendation has significant economic impacts in improving efficiencies of farm operation in Greenland, but also environmental impacts through the reduction in environment pollution from farm run-offs.

Prior to the formal approval of this project, with funding obtained from national American and Danish sources, a number of antifungal, bacterial isolates have been isolated and partially characterized. Microcosm experiments have documented the beneficial antifungal effect of the bacteria. Two antifungal peptides have been isolated and characterized.

A PhD study was finished May 2013 (Charlotte Frydenlund Michelsen, "*Beneficial Rhizobacteria: Bioactive Compounds from a Greenlandic Pseudomonas fluorescens*" funded by The Commission for Scientific Research in Greenland no. 2008-007569).

Since the establishment of this project on June 11, 2012, a Joint Committee conference on Arctic agriculture was organized and held in Qaqortoq 28 June to 4 July 2013. This conference gathered leading experts from the US, Greenland, Denmark, Canada, Norway and Sweden on plant diseases, microbiology, biological control and agriculture in the cold climate as well as social, economic and political developments in the Arctic. Because no funding was provided to this project, this conference was financed by the participants through other means.

The aim of the Conference was to identify the needs in agriculture development in the Arctic and Subarctic; development of environmentally benign solutions to diseases and crop production.
The results of the conference were agreements reached by participants to pool their considerable expertise to further cooperation and collaboration in research extension and education among participating governments on agriculture development in the Arctic and subarctic regions. The participants will seek funding from respective governments for activities within the core focus of this Joint Committee project. We also explored means for disseminating the results and increasing the interest in the general public for local farming and food security in the Arctic and Subarctic.

IceBridge

NASA's IceBridge mission is a six-year mission, the largest airborne survey of Earth's polar ice ever flown. The annual missions provide a multi-instrument look at the behavior of the rapidly changing features of the Greenland and Antarctic ice.Data collected during IceBridge helps scientists bridge the gap in polar observations between NASA's Ice, Cloud and Land Elevation Satellites (ICESat and ICESAT-2.) In orbit since 2003, ICESat stopped collecting science data in 2009. With ICESAT-2 expected to launch in 2015, IceBridge is critical for ensuring a continuous series of observations.

Under the Joint Committee, NASA has strong tri-lateral research cooperation with the Greenland Climate Research Center, the Ice&Climate Center of Excellence at University of Copenhagen as well as the Space Department of the Danish Technical University.

But NASA also has a special interest in outreach efforts, sharing information with the public and students alike. Organized via the Joint Committee, three high school science teachers represented Greenland, Denmark and the U.S. on the 2013 mission, bringing back valuable experiences, teaching materials and data to inspire science teaching in all three countries. In 2012, a total of six teachers and three journalists took part in the mission.

Additionally, in close cooperation with the Government of Greenland and the Embassy, NASA has designed a series of posters, aiming to disseminate results to the Greenlandic public at several high-visibility locations. The CEO of Greenland Airports Jens Rechnagel Lauridsen and U.S. Ambassador Gifford opened such an exhibit at the Kangerlussuaq airport on September 30, 2013, and another will be hosted by Katuaq, the culture centre in Nuuk.

Circumpolar Infectious Disease Network

Recently, Arctic health has gained international attention--not the least of which attributed to the extensive work accomplished in two important 2011 Nuuk events--the Arctic Health Ministerial and the Arctic Council Ministerial. Expanding Joint Committee outreach into this area, the Joint Committee adopted a network of Danish, Greenlandic and U.S. researchers—all dedicated to fight Arctic infectious disease. Researchers experience tremendous benefit from the sharing of best practices and coordinating research.

Inuulluataarneq/Having the good life

Inuulluataarneq was a three year project that was successfully implemented from 2009 to the end of 2012. The purpose of Inuulluataarneq was to develop, implement, evaluate, and disseminate a socio - cultural sexually transmitted infection (STI) Intervention in Greenland, with a focus on Greenlandic ways of understanding and knowing about healthy sexual behavior. During the project life there was good cooperation between the MSU and the University of Greenland.

Inuulluataarneq has provided experience and training for students in the skills, techniques and knowledge needed to carry out community based participatory research on sexual health in Arctic communities. Greenlandic students will be encouraged to be involved in all phases of the research such as assisting in working with the Community Advisory Boards and outreach workers at each site as well as in presenting results to local and academic communities and co-authoring manuscripts. By involving students in all phases of the research project they will learn strategies and effective methods of implementing sexual health CBPR projects.

End Project Inventory