

Centre for Ice and Climate
>50 pax (8 professors)



Memorandum of Understanding (MoU)

Between:

University of Copenhagen (UCPH)

and

Arctic Science Partnership (ASP)

Signed:

Date:

30/6/20 

Katrine Krogh Andersen, Dean (University of Copenhagen)

Date:

2/7-20 

Dorthe Dahl-Jensen (Arctic Science Partnership)



EASTGRIP

The aim of the project is to drill and retrieve an ice core from the Northeast Greenland Ice Stream (NEGIS). [2015-2022, International project, Logistic budget 15mill CAD, PI DDJ]; 200 scientists involved from 12 nations (CA, D, NO, DK as ASP nations)

We hope to gain:

- 1) new knowledge on how ice streams 'behave' thereby improving the understanding of how ice streams will contribute to future sea-level change.
- 2) a new record of past climatic conditions from the northeastern part of the Greenland Ice Sheet which will be analyzed at numerous laboratories worldwide.

Status:

Drill depth 2120 m of 2650m.

Status: 2020 season cancelled.

We hope and believe in a reduced 2021 season



ICEFLOW

Villum Investigator



2018-2023
40 mill DKK

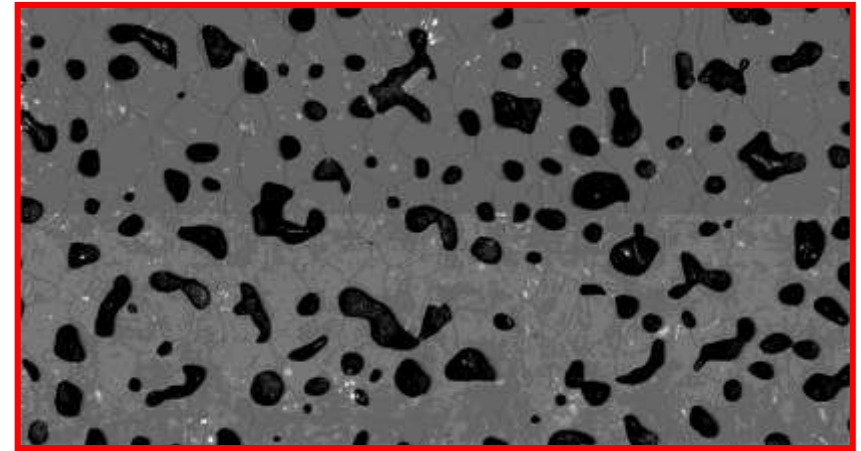
Mills Cross (or T) radar
UHF (600-900 MHz)
Linear polarization
(UCPH-AWI)



EGRIP radar
UWB radar (180-340 MHz)
Dual polarization (UCPH)



Large Area Scanning
Microscope (UCPH-AWI)



Müllers Ice Cap

Drill a 700 m ice core reach back to the glacial

Measure proxies for Sea Ice Evolution
(Halogens: Bromine, Iodine,...)

Combine with sea ice programs in the
Arctic Ocean

Bring Canadian researchers together

International program

Status: 2020 season cancelled, 2021....





Villum Experiment projects – unorthodox ideas in their early phase

High success rate at Center for Ice and Climate, NBI, KU (2yrs, 2 MDKK)

- 2017-2019: Physics of the unexpected – understanding tipping points in the Earth system (PI: P Ditlevsen)
- 2018-2021: Exploration rovers for investigation of ice sheet changes in Greenland (PI: C. Hvidberg)
- 2018-2020: Ocean Turbulence, Boundary Conditions and Climate: connecting theory with observations (PI: M. Jochum)
- 2018-2020: Unraveling paleo-climate knots with lasers (PI: V. Gkinis)
- 2019-2021: Noble gases and Earths energy budget (PI: A. Grinsted)
- 2019-2021: The whisper of ancient air bubbles in polar ice (PI: A. Svensson)



DFF-Green Transition thematic research call 2020:

2021-2024: GreenPlanning – depends on reliable seasonal to decadal predictions (6.19 MDKK) (J. H. Christensen (PI), C. S. Hvidberg, C. S. Andresen (GEUS))

- **enable improved prediction of longer-lasting episodes of extreme weather** (anomalous temperature and precipitation) in order to plan and use climate sensitive green solutions more efficiently.
- We address an important question in climate science: **Does ice melt on Greenland affect weather fluctuations in Denmark?** Model studies suggest that certain climatic modes with blocking high pressure systems can hinder warm moist air from reaching Denmark, and that these conditions are instigated by changes to sea surface conditions near to Greenland.

NUFI – DK Infrastructure

Arctic InfraStructures – all Universities in DK/GL/FI - PI. Søren Rysgaard

University of Copenhagen: Greening the Mobil Ice Camp (8.5 mill DKK)



- Solar cells on the Dome
- Plastic sledges
- New generation skidoos
- PistenBully

New research ship (DANA) (170 mill DKK)

Research Council (30% for green research) (330 mill DKK)

National Center for Climate Research (DMI) is extended (39.4 mill DKK)

The finance law has **39,4 mio. kr.** reserved to extend and strengthen **National Center for Climate Research (NCKF)** and **monitoring of the Greenland Ice Sheet.**

Brief about the National Center for Climate Research

- **Was formed in January 2020** with the purpose of generate important knowledge of climate changes and their consequences in the Kingdom of Denmark and Greenland.
- **Is located at the Danish Meteorological Institute** and collaborates with researchers in Denmark and internationally
- **Was financed for the first year** and now extended
- Has initiated **18 research projects** about melting of ice, flooding, extreme precipitation and changing ocean circulation, etc.
- **Must generate results for society** and stake holders in the Kingdom of Denmark and Greenland.

ARTICLE

<https://doi.org/10.1038/s41567-022-01534-7> OPEN

Exceptionally high biosphere productivity at the beginning of Marine Isotopic Stage 11

Margaux Brandon^{1,2,3}, Anouk Landais¹, Stéphanie Duchamp-Alphonse², Violaine Favre³, Léa Schmitz¹, Héléna Abrial¹, Frédéric Priet¹, Thomas Eckert¹ & Thomas Blunier²

Publications since last ASP meeting

>50

PERSPECTIVE

<https://doi.org/10.1038/s41567-022-01860-7>

nature climate change

Check for updates

Past perspectives on the present era of abrupt Arctic climate change

Eysteine Jansen^{1,2,3}, Jens Hesselbjerg Christensen^{2,3,4}, Trond Dokken², Kerim H. Nisancioglu^{1,5}, Bo M. Vinther², Emilie Capron¹, Chuncheng Guo², Mari F. Jensen¹, Peter L. Langen², Rasmus A. Pedersen², Shuting Yang², Mats Bentsen², Helle A. Kjaer², Henrik Sadatzki², Evangeline Sessford¹ and Martin Stendel²

RESEARCH

REVIEW SUMMARY

PALEOECOLOGY

Using paleo-archives to safeguard biodiversity under climate change

Damien A. Fordham¹, Stephen T. Jackson, Stuart C. Brown, Brian Huntley, Barry W. Brook, Dorte Dahl-Jensen, M. Thomas P. Gilbert, Bette L. Otto-Bliesner, Anders Svensson, Spyros Theodoridis, Janet M. Wilmshurst, Jessie C. Buettel, Elisabetta Canteri, Matthew McDowell, Ludovic Orlando, Julia Pilowsky, Carsten Rahbek, David Nogués-Bravo

RESEARCH

GLOBAL CLIMATE CHANGE

Synchronous timing of abrupt climate changes during the last glacial period

Ellen C. Corrick^{1,2}, Russell N. Drysdale^{1,2}, John C. Hellstrom³, Emilie Capron^{4,5}, Sune Olander Rasmussen⁶, Xu Zhang^{6,7,8}, Dominik Fleitmann⁹, Isabelle Couchoud^{2,1}, Eric Wolff¹⁰

PNAS

Pervasive Arctic lead pollution suggests substantial growth in medieval silver production modulated by plague, climate, and conflict

Joseph R. McConnell¹, Nathan J. Chellman², Andrew I. Wilson^{3,4}, Andreas Stohli², Monica M. Arienzo², Sabine Eckhardt², Diedrich Fritzsche², Sepp Kipfstuhl¹, Thomas Opel², Philip F. Place², and Jørgen Peder Steffensen²

ARTICLE

<https://doi.org/10.1038/s41567-022-02506-9> OPEN

East Greenland ice core dust record reveals timing of Greenland ice sheet advance and retreat

Marius Folden Simonsen¹, Giovanni Baccaro², Thomas Blunier¹, Alejandra Borunda^{3,4}, Barbara Delmonte², Robert Frei², Steven Goldstein^{3,4}, Aslak Grinsted¹, Helle Astrid Kjaer¹, Todd Sowers², Anders Svensson¹, Bo Vinther¹, Diana Vladimirova¹, Gisela Winckler^{3,4}, Mai Winstrup² & Paul Vallelonga¹

PNAS

Normalized US hurricane damage estimates using area of total destruction, 1900–2018

Aslak Grinsted¹, Peter Ditlevsen², and Jens Hesselbjerg Christensen²

¹Physics of Ice, Climate and Earth, Niels Bohr Institute, University of Copenhagen, Copenhagen 2200, Denmark

CFI BBOS

No news from the research council yet.

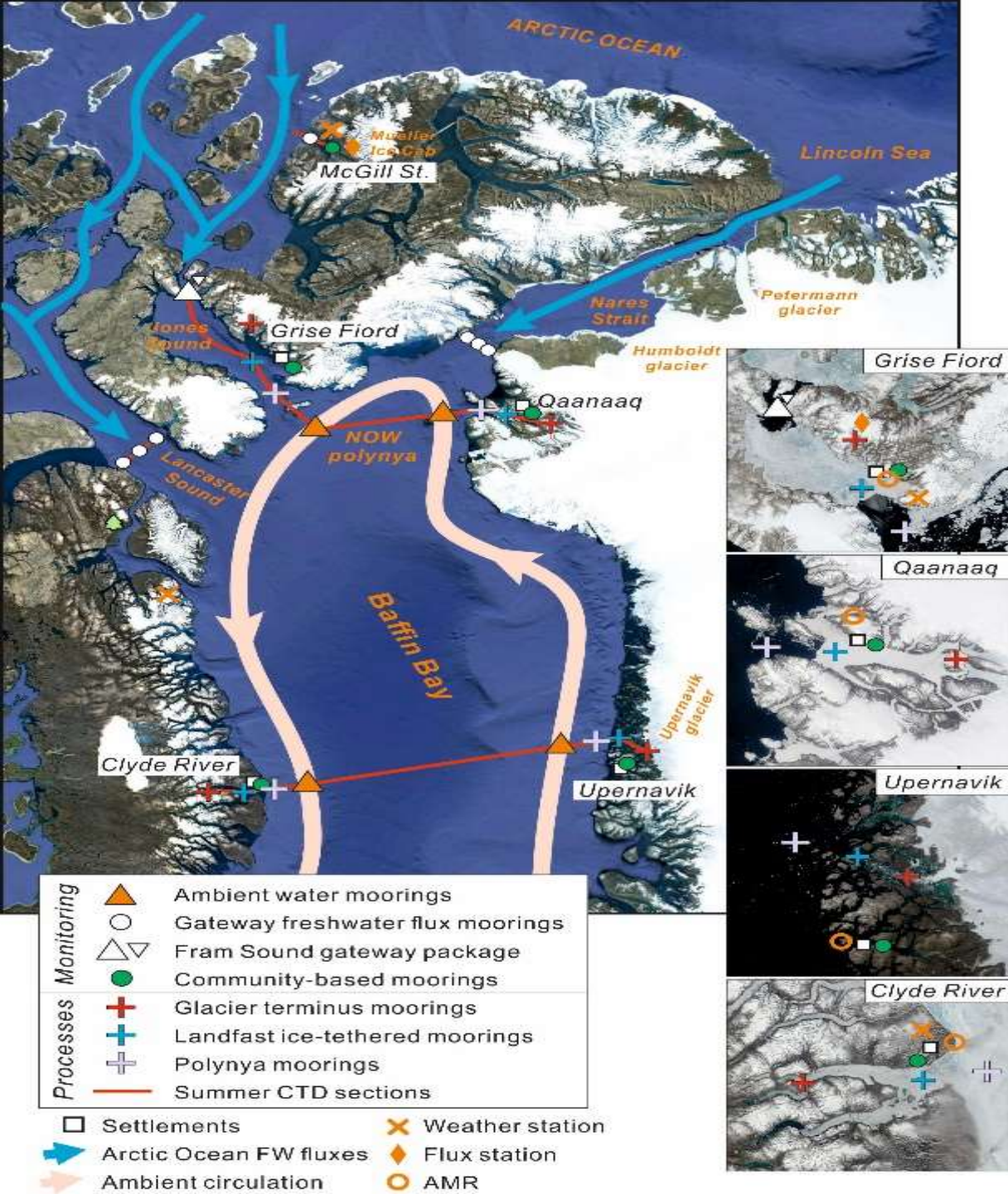
We hope to hear within the next month

IF POSITIVE:

Most likely no Canadian Arctic research 2021

A lot of instruments to build and buy 😊

Fingers still crossed



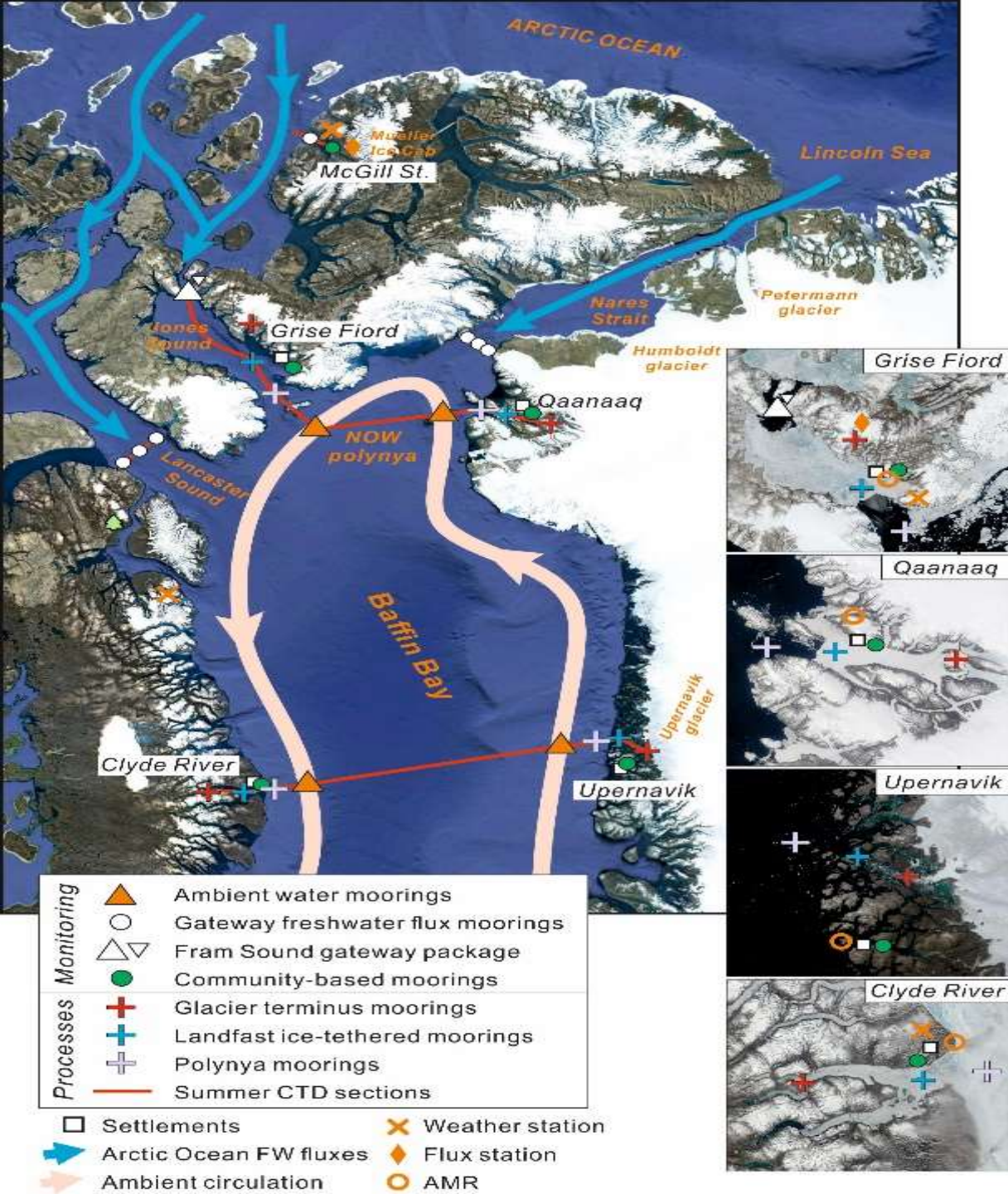
Workshop Baffin Bay

The workshop should have been held spring 2020 but was postponed due to COVID-19 pandemic.

Instead of continuing to wait I suggest we arrange a weekly seminar in spring 2021 with presentations on ongoing work and planned work.

As a final part of the web seminars we can work on joint and future projects.

At some time when possible we should meet.



Upernavik glaciers and fjord system

Workshop on ice-ocean interactions, 11-13 January

2021



Interdisciplinary workshop to study ice-ocean-atmosphere feedbacks

Lectures, panel discussions and breakout groups to stimulate discussions across various fields

Networking and development of new and existing collaborations

Virtual event – international group

Confirmed participants:

Dorthe Dahl-Jensen (Univ. Manitoba),

Organized by: C.S. Hvidberg (Univ. Copenhagen, DK) and D. Dahl-Jensen (Univ. Manitoba, CA)

Registration (no fee) and abstract: by Email to ch@nbi.ku.dk