



Arctic Science Partnership (ASP)
Science meeting
27-29 November 2018
Sandbjerg, Denmark

Summary of meeting



Group work – Selection of 3 key parameters to be standardized among our different large-scale projects.

- Group 1 – Greenland Shelf (including coast)
- Group 2 – eDNA (pan Arctic)
- Group 3 – Ice discharge, ice proxies, tracers

Group 1. (Responsible scientists: **Torsten Kanzow**, Mikael Sejr, Mie Winding, Jørgen Berge, Igor Dmitrenko, Markus Jochum, Lorenz Meire, John Mortensen)

1. Need to map what hydrographic data exists on the shelves, e.g. overview of moorings, CTDs. Create a simple overview of hydrographical data on the Greenland shelf. Meta – data will be posted on the ISAAFFIK Arctic Gateway homepage.
2. Need to identify freshwater sources, mixing processes on the shelf. Micro-turbulence vertical mixing. We will coordinate future sampling.
3. This hydrographic data mapping will be used to advise future sampling, e.g. the upcoming GLACE project
4. Need for a coordinated sampling effort on near-shore areas.

Group 2. (Responsible scientists: **Carlos Duarte**, *Philip Thomsen*, *Marit Reigstad*, *Dorte Krause-Jensen*, *Frédéric Maps*)

1. Value-add Opportunity for ASP partners to collaborate to use eDNA to establish a baseline of panArctic biodiversity and a functional and trait base biogeography of the Arctic across marine biomes (cryosphere, pelagic, benthic), different water masses and habitats.
2. Use eDNA to test key questions: (1) Testing the borealization of the Arctic based on eDNA assessments of sediment archives (with chronologies); test the rise of invasive species in the Arctic based on eDNA assessments of sediment archives; (3) Assess biosafety risks with increasing shipping (eDNA in ballast waters); (4) test predictions on trends for keystone species in the Arctic (e.g. copepod decline, replacement of diatoms by other algal groups, decline of pteropods and other organisms vulnerable to ocean acidification, rise of kelps and eelgrass).
3. Invite major sequencing facilities (e.g. Genoscope already involved in Arctic sequencing) to do the sequencing
4. Develop Standardized sampling for each biome and conduct preliminary experiments: What is the time-stamp (i.e. half-life) of eDNA in Arctic waters and in sea-ice brines? what sequencing depth is needed?

Group 3. (Responsible scientists: **Dorthe Dahl-Jensen**, *Jørgen Peder Steffensen*, *Fei Wang*, *Julienne Stroeve*, *Ryan Galley*, *CJ*, *Lotte Sørensen*, *Marianne Glacius*, *Tim Papakyriakou*, *Søren Rysgaard*)

1. Standardize a sampling list for contaminants, stable isotopes, tracers, TA (Total Alkalinity) and TIC (Total Inorganic Carbon) for glacier ice, sea ice and water samples. Recommend standard protocols.
2. Develop cheap moorings for measurements of radiation, temperature, and methodology. Include up looking and down looking under ice sensors to look at sea ice. Coordinate upward looking sonar installation with group 1 for the tops of moorings.
3. Sample sea ice parameters (freeboard, snow properties, salinity, temperature in sea ice...)
4. Sample aerosols
5. Drilling an ice core on Muellers Ice Cap
6. Focus on glacier ocean interactions in Nuuk, Peterman & 79fjorden.

Group work – Discussion of other ASP matters

- Group 1 - ASP structure, organization, annual meeting etc
- Group 2 – PhD schools
- Group 3 – Other breakout groups

Group 1 - ASP structure, organization, annual meeting etc:

- Decided to keep the ASP structure
- UiT & Copenhagen will go for a full membership – Action: **Søren, Dorthe & Jørgen**
- AWI will look into this possibility also – Action: **Nicole**

Annual meetings

2019 ASP Winnipeg 24-25 Aug

2020 ASP Tromsø June

2021 AWI

2022 Copenhagen

2023 Laval

2024 Nuuk (New airport direct flights☺)

Group 2 - Meeting about ASP PhD school:

- An overview of existing relevant teaching activities was presented (**Lotte Sørensen** will gather the info from Laval, UiT, AU/GINR, UoM).
- It is difficult to integrate the Canadian system and the Joint PhD schools (course): Decided to make a strategy and a 5-year plan for developing and implementing joint PhD courses, the first one starting in 2020.
- We (**Lotte**) will create a Thematic network application to UArctic in order to obtain financial support for PhD courses.
 - Preliminary Plan for PhD courses (10 day courses)
 - Preliminary Title: Earth systems in a changing Arctic (ESiA)....
 - Land - ocean interaction (2020, Nuuk)
 - Sea ice – marine – systems (2021)
 - (2022)
 - Fresh- water marine interaction (including effects from marine terminated glaciers) (2023)
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Group 3 – Other breakout groups

- Decided to go for the new EU calls together within the partnership collaboration.
- Canada is reviewing a new funding program to support international, interdisciplinary, fast-breaking, and high-risk research, so there is possibilities for add on funding in Canada.

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Agenda

Tuesday, 27 November 2018	
Arctic Science Partnership science meeting (plenum)	
Place: Sandbjerg	
09:00-12:00	Arrival to Sandbjerg estate – registrations and handout of key to your room
12.00-13.00	Lunch
13.30-14.00 Plenum	Welcome, idea behind the meeting and review of agenda (Søren Rysgaard).
14.00-14.20 Plenum	Presentation of projects – UManitoba (overview) <ul style="list-style-type: none">• Overview of CEOS projects (Tim Papakyriakou et al)

14:20-14:40 Plenum	Presentation of projects - Greenland (overview) <ul style="list-style-type: none"> • Overview of projects - Greenland (Mie Winding et al)
14.40-15.00 Plenum	Presentation of projects - Denmark (overview) <ul style="list-style-type: none"> • Overview of projects - Denmark (Søren Rysgaard et al)
15:00-15.20	Coffee break
15:20-15:40	Presentation of projects - Norway (overview) <ul style="list-style-type: none"> • Overview of projects - Norway (Jørgen Berge et al)
15:40-16:00 Plenum	Presentation of projects - Germany (overview) <ul style="list-style-type: none"> • Overview of projects - Germany (Uwe John et al)
16:00-16:20 Plenum	Presentation of projects – ULaval (overview) <ul style="list-style-type: none"> • Overview of projects - Takuvik (Marcel Babin et al)
16:20-16:40 Plenum	Example of a project idea at pan-Arctic scale: <ul style="list-style-type: none"> • Net energy exchange at a circumpolar scale (Torben Christensen)
16.40-17.00 Plenum	Example of a project idea at pan-Arctic scale: <ul style="list-style-type: none"> • eDNA and fish species (Philip Thomsen)
17.00-17.20	Example of a project idea – FW-marine coupling <ul style="list-style-type: none"> • Baffin Bay focused FW-marine coupling project planning (DDJ, DB, SR)
17:20-17:30	Review of agenda Day 2 / End of Day 1
19:00	Dinner
Evening	Free discussions

Wednesday, 28 November 2018 Arctic Science Partnership science meeting (plenum) Place: Sandbjerg (cntd)	
07:00-08:00	Breakfast
08.00-08.20 Plenum	Introduction to group work. <ul style="list-style-type: none"> • Selection of 3 key parameters to be standardized among our different large-scale projects. This standardization should allow us to formulate inter-comparison papers focused around the larger circumpolar and downstream scale. (Søren Rysgaard)
08.20-10.30 Group	Group work – Selection of 3 key parameters to be standardized among our different large-scale projects. <ul style="list-style-type: none"> • Group 1 – Greenland Shelf (including coast) • Group 2 – eDNA (pan Arctic) • Group 3 – Ice discharge, ice proxies, tracers
10.30-12.00 Plenum	Report of Group breakout sessions – with discussions <ul style="list-style-type: none"> • Group 1 – Greenland Shelf (including coast) • Group 2 – eDNA (pan Arctic) • Group 3 – Ice discharge, ice proxies, tracers
12.00-13.00	Lunch
13.00-14.00 Plenum	Selection of key parameters, actions and next step
14.00-15.00 Group	Group work – Discussion of new project ideas (existing ones also), joint papers and collaboration <ul style="list-style-type: none"> • Group 1 - ASP structure, organization, annual meeting etc • Group 2 – PhD schools • Group 3 – Other breakout groups
15.00-15.20	Coffee break
15.20-16.30 Group	Group work – Discussion of new project ideas (existing ones also), joint papers and collaboration - continued <ul style="list-style-type: none"> • Group 1 - ASP structure, organization, annual meeting etc • Group 2 – PhD schools • Group 3 – Other breakout groups
16.30-17.45	Report of Group breakout sessions – with discussions, actions and next step <ul style="list-style-type: none"> • Group 1 - ASP structure, organization, annual meeting etc • Group 2 – PhD schools • Group 3 – Other breakout groups
18.00	Dinner
Evening Plenum	Free discussions – the role and setup of ASP in the future

Thursday, 29 November 2018 Arctic Science Partnership science meeting (plenum)	
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Place: Sandbjerg (cntd)	
07.00-08.00	Breakfast
08.00-9.00 Plenum	<ul style="list-style-type: none"> • Summarize, and evaluate ASP annual meeting (Søren Rysgaard) • Next step
09.00	End of ASP science meeting

List of participants

Dorthe Dahl Jensen, University of Manitoba & University of Copenhagen

Julienne Stroeve, University of Manitoba & University College London

CJ Mundy, University of Manitoba

Tim Papakyriakou, University of Manitoba

Igor Dmitrenko, University of Manitoba

Feiyue (Fei) Wang, University of Manitoba

Emmelia Wiley, University of Manitoba

Lauren Candlish, University of Manitoba

Ryan Galley, University of Manitoba

Wieter Boone, University of Manitoba

Thomas Juul Pedersen, Greenland Institute of Natural Resources

John Mortensen, Greenland Institute of Natural Resources

Lorenz Meire, Greenland Institute of Natural Resources

Mie Winding, Greenland Institute of Natural Resources

Teunis Jansen, Greenland Institute of Natural Resources

Søren Rysgaard, Aarhus University, University of Manitoba

Mikael Sejr, Aarhus University

Lise Lotte Sørensen, Aarhus University

Torben Røjle Christensen, Aarhus University

Peter Grønkjær, Aarhus University

Dorte Krause Jensen, Aarhus University

Egon Frandsen, Aarhus University

Philip Thomsen, Aarhus University

Carlos Duarte, Aarhus University

Jørgen Berge, UiT, The Arctic University of Tromsø

Marit Reigstad, UiT, The Arctic University of Tromsø

Lena Seuthe, UiT, The Arctic University of Tromsø

Paul Wassmann, The Arctic University of Tromsø

Sebastian Gerland, Norwegian Polar Institute

Asgeir Johan Sørensen, NTNU

Kjetil Sagerup, Akvaplan Niva

Uwe John, AWI

Nicole Biebow, AWI

Anja Sommerfeld, AWI

Dirk Mengedoht, AWI

Torsten Kansow, AWI

Felix Janssen, AWI

Sinhue Torres, AWI

Tina LoebI, AWI

Marcel Babin, Université Laval

Philippe Archambault, Université Laval

Frédéric Maps, Université Laval

Jørgen Peder Steffensen, University Copenhagen

Marcus Jokum, University of Copenhagen

ASP secretary: Peter Mikkelsen, Aarhus University



ASP field roadmap 2012-2021

